KENWOOD

REGULATED DC POWER SUPPLY

PA18-1.2A PA18-3A PA18-6A PA36-1.2A PA36-3A PA70-1A

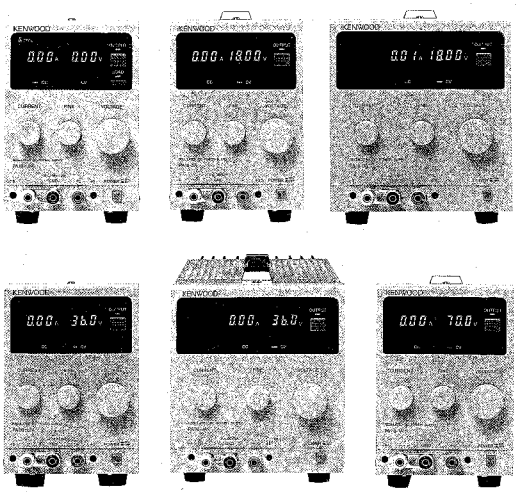
OPTION

EXTERNAL I/O UNIT

OP-13A

SERVICE MANUAL

KENWOOD CORPORATION



WARNING

The following instructions are for use by qualified personnel only. To avoid electric shock, do not perform any servicing other than contained in the operating instructions unless you are qualified to do so.

CONTENTS

ADJUSTMENT 3
PARTS LIST 4
SCHEMATIC DIAGRAM 19
P.C. BOARD 27

ADJUSTMENT

To obtain the best performance, periodically calibrate the unit. Sometimes, only one mode need be calibrated, while at other times, all modes should be calibrated. When one mode is calibrated, it must be noted that the other modes may be affected. When calibrating all modes, perform the calibration in the specified sequence.
The following calibration required an accurate measuring instrument and an insulated adjusting flat blade screwdriver. If they are not available, contact your dealer. For optimum adjustment, turn the power on and warm up the unit sufficiently (more than 30 minutes) before starting.
Before calibrating the unit, check the power supply voltage.

TEST EQUIPMENT REQUIRED

The following instrument or their equivalent should be used for making adjustment.

Multimeter 45 Fluke

Item	Adjustment VR	P.C.B.	Procedure
V. OFF	VR4	PA18-1.2A W02-2274-08 PA18-3A W02-2276-08 PA18-6A W02-2278-08 PA36-1.2A W02-2279-08 PA36-3A W02-2280-08 PA70-1A W02-2281-08	Set the COARSE and FINE potentiometers on the front panel to the minimum positions, and adjust VR4 so that the output Voltage reads 0.000 V.
A. OFF	VR5		Set the CURRENT potentiometer to the minimum position, and adjust VR5 so that the output currant reads −0.000□ A (□ : 1 to 4).
Output voltage (V. ADJ)	VR1		Set the COARSE and FINE potentiometers so the maximum positions, and adjust VR1 to read the rated output voltage.
Output current (A. ADJ)	VR2		Set the CURRENT potentiometer to the maximum position, and adjust VR2 to read the rated output current.
CV	VR1 VR2	TOP VR1 VR2 VR3	• Set the multimeter to 19.00 V, and adjust VR1 (CV_L) on the digital panel meter so that the voltage reads 19.00 V. • With the PA36-1.2A, PA36-3A and PA70-1A the output voltages of which are above 19 V, use the similar procedure as above but adjust VR2 (CV_H). With the PA18-1.2A, PA18-3A and PA18-6A set the Power switch ON/OFF and adjust to 18.5 V.
CC	VR3		Adjust VR3 (CC) so that the CC display becomes the same at the maximum output current.

Specifications / Model	Output voltage setting [V]	Output current setting [A]
PA18-1.2A	18.5	1.28
PA18-3A		3.19
PA18-6A		6.38
PA36-1.2A	37	1.28
PA36-3A		3.19
PA70-1A	72	1.06

Table 1

PARTS LIST

PA18-1.2A

Y86-1920-00

REF.NO	PARTS NO	NAME & DESCRIPTION
	A01-1236-08	COVER
	A03-3139-08	FRONT PANEL
	B11-0525-08	FILTER
	B40-2737-24	SERIAL NO. PLATE
	B42-3734-08	RATING:AC100V 50/60HZ 45W
	B42-3735-08	FUSE RATING LABEL
	B42-3749-08	RATING:AC120V 50/60HZ 45W
	B42-3750-08	RATING:AC220V 50/60HZ 45W
	B42-3751-08	RATING:AC240V 50/60HZ 45W
	B42-3752-08	RATING:AC230V 60HZ 45W
	B42-2885-08	EXTERNAL CONTROL LABEL
	B63-0175-00	INSTRUCTION MANUAL:JAPANESE
	B63-0176-00	INSTRUCTION MANUAL:ENGLISH
	E12-0401-15	SENSOR PLUG
	E21-0670-03	TERMINAL,RED
	E21-0671-03	TERMINAL,BLACK
	E21-0672-03	TERMINAL,WHITE
	E29-0506-04	SHORTING BAR
	E29-0542-08	LUG:M3
	E30-0027-35	UL/CSA POWER CORD
	E30-0545-05	JIS POWER CORD
	E30-0571-15	SAA POWER CORD
	E30-1816-05	CSE POWER CORD
	E30-1807-05	BS POWER CORD
	F01-0684-08	HEAT SINK
	F05-8013-08	FUSE(5X20MM) 0.8A/250V
	F05-8015-08	FUSE(6.3X32MM) 0.8A/250V
	F11-1243-08	SHIELD CASE
	F29-0515-05	INSULATOR;FOR Q6
	F31-0607-08	FUSE(6X30) 1.5A//125V
	H10-2853-08	FOAMED STYRENE PAD (FRONT)
	H10-2854-08	FOAMED STYRENE PAD (REAR)
	H10-2855-05	STYRENE PAD:853X151X30MM
	H10-2858-08	STYRENE PAD:154X295X30MM
	H26-1734-08	VINYL COVER
	H53-0118-08	CARTON BOX
	J02-0528-08	FOOT
	J19-1671-08	CLAMPER;FOR 2-CORE AC CORD
	J19-1672-08	CLAMPER;FOR 3-CORE AC CORD
	J21-4720-08	BRACKET;FOR P.C.B
	J21-4756-05	BRACKET;FOR AC CORD BUSHING
	J29-0516-08	BRACKET;FOR EXT. CONTROL BOARD
	J30-0532-08	VOLUME SPACER
	J30-0635-08	VOLUME SPACER;FOR VR01
	J42-0282-05	BUSHING;FOR 2-CORE AC CORD
	J61-0408-05	WIRE WRAPPING BAND
	K21-0907-14	KNOB
	K21-0911-04	KNOB;FINE/CURRENT
	K27-0508-04	PUSH BUTTON,ORANGE;POWER
	K27-0557-04	BUTTON,RED;OUTPUT
	L07-1632-08	POWER TRANSFORMER
	N09-0718-05	SCREW,SEMS PAN HD M3X8
	N09-0720-05	SCREW,SEMS PAN HD M4X10
	N09-0757-05	SCREW,SEMS BINDING TAPTITE 3X8
	N09-0758-05	SCREW,SEMS PAN HD M3X10
	N09-0797-08	SCREW,SEMS TAPTITE 3X10
	N14-0404-04	FLANGE NUT M3
	N92-3506-41	SCREW,FLAT HD M3X6
	N99-3006-41	SCREW,BINDING TAPTITE 3X6
	N99-3010-41	SCREW,BINDING TAPTITE 3X10
	N99-3012-41	SCREW,BINDING TAPTITE 3X12
	S16-2533-08	PUSH SWITCH;POWER
	W02-2274-08	AMP UNIT
	W02-2275-08	EXT. CONTROL UNIT
	W02-2303-08	P.P.M. UNIT
VR01	R28-2503-08	VOLUME 10K
VR02	R28-1508-08	VOLUME 1K
VR03	R28-3504-08	VOLUME 10K

PA18-1.2A AMP UNIT

W02-2274-08

REF.NO	PARTS NO	NAME & DESCRIPTION
	H1K-0158-08	SENSING TERMINAL
	H21-0674-08	EXTERNAL OUTPUT TERMINAL
	E40-7141-08	PIN CONNECTOR 2P(LINE VOLT AGE)
	E40-7142-08	PIN CONNECTOR 1P(LINE VOLT AGE)
	E40-7171-08	PIN CONNECTOR 2P
	J13-0518-05	FUSE CLIP;FOR 6X30MM
	J73-0260-08	PCB (UNMOUNTED)
	K02-0150-05	JUMPING SEE. ZERO OHM(0 OHM)
	R93-1051-05	JUMPING RES. ZERO OHM(5MM)
C1	C90-5023-08	CAP. ELECTRO 470 105°C 35V
C2	C90Z81E222X	CAP. MYLAR 2200P 10% 50V
C3	C91-2559-08	CAP. CERAMIC 0.1 0.25P 50V
C4	C90Z81E472X	CAP. MYLAR 4700P 10% 50V
C5	C90Z81E103X	CAP. MYLAR 0.01 10% 50V
C6	NO USE	
C7	C90-5020-08	CAP. ELECTRO 100 105°C 25V
C8	CF93AWZE22X	CAP. POLYESTER 0.22P 10% 250V
C9	NO USE	
C10	C90-5021-08	CAP. ELECTRO 2200 105°C 35V
C11	CF93AW1J822X	CAP. POLYESTER 0.22P 10% 63V
C12	C90-3033-08	CAP. ELECTRO 220 105°C 25V
C13	C90-5023-08	CAP. ELECTRO 220 105°C 25V
C14	CF93AW1J104K	CAP. POLYESTER 0.1 10% 63V
C15	CF93AW1J104K	CAP. POLYESTER 0.1 10% 63V
C16	NO USE	
C17	C90-3034-08	CAP. ELECTRO 100 105°C 16V
C18	C90-3034-08	CAP. ELECTRO 100 105°C 16V
C19	C90-3022-08	CAP. ELECTRO 4.7 105°C 50V
C20	CF93AW1J104K	CAP. POLYESTER 0.1 10% 63V
C21	NO USE	
C22	C91-2559-08	CAP. CERAMIC 0.1 0.25P 50V
C26	C90-3174-08	CAP. ELECTRO 10 1% 50V
C27	NO USE	
C28	C90-3020-08	CAP. ELECTRO 100 105°C 25V
C29	C91-2559-08	CAP. CERAMIC 0.1 0.25P 50V
C30	NO USE	
C31	C90-3020-08	CAP. ELECTRO 100 105°C 25V
C32	CF93AW1J183X	CAP. POLYESTER 1P 10% 63V
CF1	E40-7184-08	PIN CONNECTOR 5P
CN2	E40-7327-08	PIN CONNECTOR 12P
CN3	E40-7328-08	PIN CONNECTOR 15P
CN4	E40-7126-08	PIN CONNECTOR 2P
CN5	E40-7219-08	PIN CONNECTOR 3P
CN6	NO USE	
CN7	E40-7229-08	PIN CONNECTOR 4P
CN11	E40-7332-08	PIN CONNECTOR 4P
CN12	E40-7333-08	PIN CONNECTOR 2P
CN13	E40-7338-08	PIN CONNECTOR 2P
CN14	E40-7338-08	PIN CONNECTOR 2P
CN20	E40-3240-05	PIN CONNECTOR 5P
CNCF1	E40-7323-08	PIN CONNECTOR 2P
CO1	C90-3018-08	CAP. ELECTRO 1 105°C 50V
CO1	CR1-1323-08	CAP. CERAMIC 0.1 20% 250V
CO2	NO USE	
CO3	C90-3041-08	CAP. ELECTRO 2.2 105°C 50V
D1	1R4B42	DIODE,STACK
D2	ERA15-01	DIODE
D3	1SS270A	DIODE
D4	1SS270A	DIODE
D5	1SS270A	DIODE
D6	1SS270A	DIODE
D7	1SS270A	DIODE
D8	NO USE	
D9	DA5N60	DIODE,STACK
D10	NO USE	
D11	1R4B42	DIODE,STACK
D14	1SS270A	DIODE
D15	1SS270A	DIODE
D16	1SS270A	DIODE
D24	1SS270A	DIODE
D25	1SS270A	DIODE
D26	NO USE	
D27	ERA15-01	DIODE
D28	ERA15-01	DIODE
D29	ERA15-01	DIODE
D30	ERA15-01	DIODE
D31	ERA15-01	DIODE
D32	ERA15-01	DIODE
D33	ERA15-01	DIODE
D34	1SS270A	DIODE
D37	ERA15-01	DIODE

PARTS LIST

REF.NO	PARTS NO	NAME & DESCRIPTION
D38	1SS270A	DIODE
D39	ERA15-01	DIODE
D01	ERA15-01	DIODE
IC1	UPC151C	IC,OP AMP
IC2	UPC151C	IC,OP AMP
IC3	UPC1095J	IC,VARIABLE SHUNT REGULATOR
IC4	UPC78M05H	IC,3-TERMINAL REGULATOR
IC5	UPC79M05H	IC,3-TERMINAL REGULATOR
IC6	UPC1095J	IC,VARIABLE SHUNT REGULATOR
IC7	LM607CN	IC,OP AMP
IC8	UPC1093J	IC,VARIABLE SHUNT REGULATOR
IC9	BA178L12A	IC,TERMINAL,FIXED VOLTAGE REG.
Q1	2SC1815(GR)	TR, SI, NPN
Q2	2SC1815(GR)	TR, SI, NPN
Q3	2SC1815(GR)	TR, SI, NPN
Q4	2SC1815(GR)	TR, SI, NPN
Q5	2SC1815(GR)	TR, SI, NPN
Q6	2SA1468(O)	TR, SI, PNP
Q7	NO USE	
Q8	2SC3421(Y)	TR, SI, NPN
Q13	2SC1815(GR)	TR, SI, NPN
Q17	DTA143EF	TR, DIGITAL
R1	RD14BB2C122J	RES, CARBON 1.2K 5% 1/6W
R2	RD14BB2C123J	RES, CARBON 12K 5% 1/6W
R3	RD14BB2C302J	RES, CARBON 3K 5% 1/6W
R4	RD14BB2C510J	RES, CARBON 51 5% 1/6W
R5	RD14BB2C682J	RES, CARBON 6.8K 5% 1/6W
R6	RD14BB2C273J	RES, CARBON 27K 5% 1/6W
R7	RN14BB2C5101F	RES, METAL FILM 5.1K 1% 1/6W
R8	RD14BB2C202J	RES, CARBON 2K 5% 1/6W
R9	RD14BB2C102J	RES, CARBON 1K 5% 1/6W
R10	RD14BB2C472J	RES, CARBON 4.7K 5% 1/6W
R11	RD14BB2C513J	RES, CARBON 51K 5% 1/6W
R12	NO USE	
R13	RD14BB2C202J	RES, CARBON 2K 5% 1/6W
R14	RD14BB2C152J	RES, CARBON 1.5K 5% 1/6W
R15	RD14BB2C511J	RES, CARBON 510 5% 1/6W
R16	RD14BB2C512J	RES, CARBON 5.1K 5% 1/6W
R17	NO USE	
R18	RD14BB2C513J	RES, CARBON 51K 5% 1/6W
R19	RD14BB2C103J	RES, CARBON 10K 5% 1/6W
R20	RD14BB2C102J	RES, CARBON 1K 5% 1/6W
R21	RN14BK2C1603F	RES, METAL FILM 160K 1% 1/6W
R22	RD14BB2C105J	RES, CARBON 1M 5% 1/6W
R23	RN14BK2C9101F	RES, METAL FILM 9.1K 1% 1/6W
R24	RN14BK2C3001F	RES, METAL FILM 3K 1% 1/6W
R27	RD14BB2C103J	RES, CARBON 10K 5% 1/6W
R28	RD14BB2C103J	RES, CARBON 10K 5% 1/6W
R29	RS14GB3B152J	RES, METAL FILM 1.5K 5% 2W
R44	RD14BB2C101J	RES, CARBON 100 5% 1/6W
R45	RD14DB2E202J	RES, CARBON 2K 5% 1/2W
R51	RN14BK2C2401F	RES, METAL FILM 2.4K 1% 1/6W
R52	RN14BK2C3901F	RES, METAL FILM 3K 1% 1/6W
R53	RD14BB2C911J	RES, CARBON 910 5% 1/6W
R54	RD14BB2C701J	RES, CARBON 700 5% 1/6W
R55	RN14BK2C5102F	RES, METAL FILM 51K 1% 1/6W
R56	RN14BK2C5102F	RES, METAL FILM 51K 1% 1/6W
R57	NO USE	
R58	RN14BK2C5102F	RES, METAL FILM 51K 1% 1/6W
R59	RN14BK2C5102F	RES, METAL FILM 51K 1% 1/6W
R60	RD14BB2C511J	RES, CARBON 510 5% 1/6W
R61	RN14BK2C9101F	RES, METAL FILM 9.1K 1% 1/6W
R62	RD14BB2C302J	RES, CARBON 3K 5% 1/6W
R63	NO USE	
R64	RN14BK2C1802F	RES, METAL FILM 18K 1% 1/6W
R67	RS14GB3DR43J	RES, METAL FILM 0.43 5% 2W
R68	RD14BB2C333J	RES, CARBON 33K 5% 1/6W
R69	RD14BB2C821J	RES, CARBON 820 5% 1/6W
R74	RD14BB2C102J	RES, CARBON 1K 5% 1/6W
R75	RD14DB2E202J	RES, CARBON 2K 5% 1/2W
R85	RD14BB2E101J	RES, CARBON 100 5% 1/2W
R86	RS14GB3A102J	RES, METAL FILM 1K 5% 1W
R87	RS14GB3A102J	RES, METAL FILM 1K 5% 1W
R88	RD14BB2C104J	RES, CARBON 100K 5% 1/6W
R91	RD14BB2C103J	RES, CARBON 10K 5% 1/6W
R94	RD14BB2C100J	RES, CARBON 10 5% 1/6W
R95	NO USE	
R96	RD14BB2C912J	RES, CARBON 9.1K 5% 1/6W
R01	RN14BK2C1003F	RES, METAL FILM 100K 1% 1/6W
RTH1	100D-5	THERMISTER

REF.NO	PARTS NO	NAME & DESCRIPTION
RY1	S76-0604-08	RELAY
RY2	NO USE	
RY3	S76-0604-08	RELAY
RY4	S76-0630-08	RELAY
SW2	S31-1512-08	MASTER/SLAVE SWITCH
VR1	R12-1564-08	RES, SEMI FIXED 1KB
VR2	R12-3568-08	RES, SEMI FIXED 30KB
VR3	NO USE	
VR4	R12-3567-08	RES, SEMI FIXED 10KB
VR5	R12-3567-08	RES, SEMI FIXED 10KB

PARTS LIST

PA18-3A
Y86-1930-00

REF.NO	PARTS NO	NAME & DESCRIPTION
	A01-1237-08	CASE
	A63-0120-08	FRONT PANEL
	A11-0525-08	FILTER
	B40-2737-24	SERIAL NO. PLATE
	B42-3733-08	FUSE RATING LABEL
	B42-3885-08	EXTERNAL CONTROL LABEL
	B42-6035-08	RATING;AC100V 50/60HZ 100W
	B42-6036-08	RATING;AC120V 50/60HZ 100W
	B42-6037-08	RATING;AC220V 50/60HZ 100W
	B42-6038-08	RATING;AC240V 50/60HZ 100W
	B42-6039-08	RATING;AC120V 60HZ 100W
	B53-6178-00	INSTRUCTION MANUAL;JAPANESE
	B53-6176-00	INSTRUCTION MANUAL;ENGLISH
	E12-6401-15	SENSOR PLUG
	E21-6670-03	TERMINAL,RED
	E21-6671-03	TERMINAL,BLACK
	E21-6672-03	TERMINAL,WHITE
	E29-6560-04	SHORTING BAR
	E29-6562-08	LEG;#3
	E30-0027-35	BL/CSA POWER CORD
	E30-2545-05	JIS POWER CORD
	E30-2571-15	SAA POWER CORD
	E30-1815-05	CEE POWER CORD
	E30-1867-05	BS POWER CORD
	F01-0885-08	HEAT SINK
	F05-2021-08	FUSE(6320MM) 2A/250V
	F05-2023-05	FUSE(6.3X32MM) 2A/250V
	F11-1243-08	SHIELD CASE
	F29-0515-08	INSULATOR;FOR Q6
	F29-0517-08	INSULATOR;FOR Q6/Q11
	F51-0009-08	FUSE(6X30MM) 3A/125V
	H10-2852-08	FOAMED STYRENE PAD (FRONT)
	H10-2854-08	FOAMED STYRENE PAD (REAR)
	H20-1734-08	VINYL COVER
	H50-0119-08	CARTON BOX
	J62-0528-08	FOOT
	J10-1671-08	CLAMPER;FOR 2-CORE AC CORD
	J10-1672-08	CLAMPER;FOR 3-CORE AC CORD
	J21-4720-08	BRACKET;FOR P.C.B
	J21-4758-08	BRACKET;FOR AC CORD BENDING
	J29-0516-08	BRACKET;FOR EXT. CONTROL BOARD
	J29-0518-08	BRACKET;FOR P.C.B
	J30-0532-08	VOLUME SPACER
	J30-0535-08	VOLUME SPACER;FOR VR01
	J42-0083-05	BUSHING;FOR 2-CORE AC CORD
	X01-2417-05	HANDLE
	X21-0907-14	EROR
	X21-0911-04	KNOB;FINE/CURRENT
	X27-0509-04	PUSH BUTTON,ORANGE;POWER
	X27-0557-04	BUTTON,RED;OUTPUT
	L07-1523-08	POWER TRANSFORMER
	N09-6718-05	SCREW,SEMS PAN HD M3X6
	N09-6720-05	SCREW,SEMS PAN HD M4X10
	N09-0757-05	SCREW,SEMS BINDING TAPTITE 3X8
	N09-0777-05	SCREW,SEMS PAN HD M4X6
	N09-0789-05	SCREW,SEMS PAN HD M3X10
	N09-0797-08	SCREW,SEMS TAPTITE 3X10
	N11-0404-04	FLANGE NUT M3
	N32-3006-41	SCREW,FLAT HD M3X6
	N44-3006-41	SCREW,BINDING TAPTITE 3X6
	N45-3012-41	SCREW,BINDING TAPTITE 3X12
	S49-2533-08	PUSH SWITCH;POWER
	W02-2275-08	EXT. CONTROL UNIT
	W02-2276-08	AMP UNIT
	W02-2303-08	D.P.M. UNIT
VR01	B2B-3503-08	VOLUME 10K
VR02	B2B-1508-08	VOLUME 1K
VR03	B2B-3504-08	VOLUME 10K

PA18-3A AMP UNIT
W02-2276-08

REF.NO	PARTS NO	NAME & DESCRIPTION
	E18-6165-08	SENSING TERMINAL
	E21-6674-08	EXTERNAL OUTPUT TERMINAL
	E40-7141-08	PIN CONNECTOR 2P(LINE VOLTAGE)
	E40-7142-08	PIN CONNECTOR 1P(LINE VOLTAGE)
	E40-7171-08	PIN CONNECTOR 2P
	J13-0518-08	FUSE CLIP;FOR 6X30MM
	J73-0250-08	PCB (UNMOUNTED)
	R62-0150-05	JUMPING RES. ZERO OHM(0 OHM)
	R62-1081-05	JUMPING RES. ZERO OHM (5MM)
C1	C90-3019-08	CAP. ELECTRO 1000 105'C 35V
C2	C09ZN1H222K	CAP. MYLAR 2200P 10% 50V
C3	C91-2559-08	CAP. CERAMIC 0.1 0.25P 50V
C4	C09ZN1H472K	CAP. MYLAR 4700P 10% 50V
C5	C09ZN1H103K	CAP. MYLAR 0.01 10% 50V
C6	NO USE	
C7	C90-3020-08	CAP. ELECTRO 100 105'C 25V
C8	CPN3AW2E222K	CAP. POLYESTER 0.22P 10% 250V
C9	NO USE	
C10	C90-3021-08	CAP. ELECTRO 2200 105'C 35V
C11	CPN3AW1J223K	CAP. POLYESTER 0.22P 10% 63V
C12	C90-3033-08	CAP. ELECTRO 220 105'C 25V
C13	C90-3033-08	CAP. ELECTRO 220 105'C 25V
C14	CPN3AW1J104K	CAP. POLYESTER 0.1 10% 63V
C15	CPN3AW1J104K	CAP. POLYESTER 0.1 10% 63V
C16	NO USE	
C17	C90-3034-08	CAP. ELECTRO 100 105'C 16V
C18	C90-3034-08	CAP. ELECTRO 100 105'C 16V
C19	C90-3022-08	CAP. ELECTRO 4.7 105'C 50V
C20	CPN3AW1J104K	CAP. POLYESTER 0.1 10% 63V
C21	NO USE	
C22	C91-2559-08	CAP. CERAMIC 0.1 0.25P 50V
C26	C90-3176-08	CAP. ELECTRO 10 1% 50V
C27	NO USE	
C28	C90-3020-08	CAP. ELECTRO 100 105'C 25V
C29	C91-2559-08	CAP. CERAMIC 0.1 0.25P 50V
C30	NO USE	
C31	C90-3020-08	CAP. ELECTRO 100 105'C 25V
C32	CPN3AW1J180K	CAP. POLYESTER 1P 10% 63V
CN1	E40-7184-08	PIN CONNECTOR 5P
CN2	E40-7327-08	PIN CONNECTOR 12P
CN3	E40-7328-08	PIN CONNECTOR 15P
CN4	E40-7125-08	PIN CONNECTOR 2P
CN5	E40-7219-08	PIN CONNECTOR 3P
CN6	E40-7218-08	PIN CONNECTOR 3P
CN7	E40-7228-08	PIN CONNECTOR 4P
CN8	E40-7229-08	PIN CONNECTOR 4P
CN11	E40-7332-08	PIN CONNECTOR 4P
CN12	E40-7333-08	PIN CONNECTOR 2P
CN13	E40-7333-08	PIN CONNECTOR 2P
CN14	E40-7333-08	PIN CONNECTOR 2P
CN20	E40-3240-05	PIN CONNECTOR 5P
CNGP1	E40-7333-08	PIN CONNECTOR 2P
C01	C90-3018-08	CAP. ELECTRO 1 105'C 50V
C01	C91-1323-08	CAP. CERAMIC 0.1 20% 250V
C02	NO USE	
C03	C90-3041-08	CAP. ELECTRO 2.2 105'C 50V
D1	1S4842	DIODE,STACK
D2	ERA15-01	DIODE
D3	1SS270A	DIODE
D4	1SS270A	DIODE
D5	1SS270A	DIODE
D6	1SS270A	DIODE
D7	1SS270A	DIODE
D8	NO USE	
D9	D10SD40	DIODE,STACK
D10	ERA15-01	DIODE
D11	1S4842	DIODE,STACK
D14	1SS270A	DIODE
D15	1SS270A	DIODE
D16	1SS270A	DIODE
D24	1SS270A	DIODE
D25	1SS270A	DIODE
D26	NO USE	
D27	ERA15-01	DIODE
D28	ERA15-01	DIODE
D29	ERA15-01	DIODE
D30	ERA15-01	DIODE
D31	ERA15-01	DIODE
D32	ERA15-01	DIODE
D33	ERA15-01	DIODE
D34	1SS270A	DIODE

PARTS LIST

REF.NO	PARTS NO	NAME & DESCRIPTION
D37	ERA15-01	DIODE
D38	1SS270A	DIODE
D39	ERA15-01	DIODE
D01	3081	DIODE
IC1	UPC151C	IC,OP AMP
IC2	UPC151C	IC,OP AMP
IC5	UPC1093J	IC,V.VARIABLE SHUNT REGULATOR
IC4	UPC78M05K	IC,3-TERMINAL REGULATOR
IC5	UPC78M05H	IC,3-TERMINAL REGULATOR
IC6	UPC1093J	IC,V.VARIABLE SHUNT REGULATOR
IC7	LM6078N	IC,OP AMP
IC8	UPC1093J	IC,V.VARIABLE SHUNT REGULATOR
IC9	HA178L12A	IC,TERMINAL FIXED VOLTAGE REG.
Q1	2SC1815(GR)	TR. SI. NPN
Q2	2SC1815(GR)	TR. SI. NPN
Q3	2SC1815(GR)	TR. SI. NPN
Q4	2SC1815(GR)	TR. SI. NPN
Q5	2SC1815(GR)	TR. SI. NPN
Q6	2SB1148(O)	TR. SI. PPN
Q7	2SC2236(Y)	TR. SI. NPN
Q8	2SC3421(Y)	TR. SI. NPN
Q9	2SC1815(GR)	TR. SI. NPN
Q10	2SC1815(GR)	TR. SI. NPN
Q13	2SC1815(GR)	TR. SI. NPN
Q17	D7A143EF	TR. DIGITAL
Q11A	2SD114A(O)	TR. SI. NPN
Q11B	2SD114B(O)	TR. SI. NPN
R1	RD14B3Z0122J	RES. CARBON 1.2K 5% 1/8W
R2	RD14B3Z0123J	RES. CARBON 12K 5% 1/8W
R3	RD14B3Z0303J	RES. CARBON 30K 5% 1/8W
R4	RD14B3Z0510J	RES. CARBON 51 5% 1/8W
R5	RD14B3Z0102J	RES. CARBON 1K 5% 1/8W
R6	RD14B3Z0273J	RES. CARBON 27K 5% 1/8W
R7	RN14B2Z0510F	RES. METAL FILM 5.1K 1% 1/8W
R8	RD14B3Z0202J	RES. CARBON 2K 5% 1/8W
R9	RD14B3Z0102J	RES. CARBON 1K 5% 1/8W
R10	RD14B3Z0511J	RES. CARBON 510 5% 1/8W
R11	RD14B3Z0513J	RES. CARBON 51K 5% 1/8W
R12	NO USE	
R13	RD14B3Z0202J	RES. CARBON 2K 5% 1/8W
R14	RD14B3Z0152J	RES. CARBON 1.5K 5% 1/8W
R15	RD14B3Z0102J	RES. CARBON 1K 5% 1/8W
R16	RD14B3Z0512J	RES. CARBON 5.1K 5% 1/8W
R17	NO USE	
R18	RD14B3Z0513J	RES. CARBON 51K 5% 1/8W
R19	RD14B3Z0103J	RES. CARBON 10K 5% 1/8W
R20	RD14B3Z0102J	RES. CARBON 1K 5% 1/8W
R21	RN14B2Z0339F	RES. METAL FILM 33OR 1% 1/8W
R22	RD14B3Z0102J	RES. CARBON 1K 5% 1/8W
R23	RN14B2Z0910F	RES. METAL FILM 9.1K 1% 1/8W
R24	RN14B2Z0300F	RES. METAL FILM 3K 1% 1/8W
R27	RD14B3Z0102J	RES. CARBON 1K 5% 1/8W
R28	RD14B3Z0103J	RES. CARBON 10K 5% 1/8W
R29	RS14GB3D152J	RES. METAL FILM 1.5K 5% 2W
R30	RS14GB3AR33J	RES. METAL FILM 0.33 5% 1W
R34	RD14B3Z0122J	RES. CARBON 1.2K 5% 1/8W
R35	RD14B3Z0123J	RES. CARBON 12K 5% 1/8W
R36	RD14B3Z0302J	RES. CARBON 3K 5% 1/8W
R37	RD14B3Z0510J	RES. CARBON 51 5% 1/8W
R38	RD14B3Z0133J	RES. CARBON 13K 5% 1/8W
R39	RD14B3Z0273J	RES. CARBON 27K 5% 1/8W
R43	RD14B3Z0103J	RES. CARBON 10K 5% 1/8W
R44	RD14B3Z0101J	RES. CARBON 100 5% 1/8W
R45	RD14DB2E202J	RES. CARBON 2K 5% 1/2W
R51	RN14B2Z0240F	RES. METAL FILM 2.4K 1% 1/8W
R52	RN14B2Z0900F	RES. METAL FILM 30 1% 1/8W
R53	RD14B3Z0811J	RES. CARBON 810 5% 1/8W
R54	RD14B3Z0101J	RES. CARBON 100 5% 1/8W
R55	RN14B2Z0510F	RES. METAL FILM 51K 1% 1/8W
R56	RN14B2Z0302F	RES. METAL FILM 51K 1% 1/8W
R57	NO USE	
R58	RN14B2Z0510F	RES. METAL FILM 51K 1% 1/8W
R59	RN14B2Z0510F	RES. METAL FILM 51K 1% 1/8W
R60	RD14B3Z0511J	RES. CARBON 510 5% 1/8W
R61	RN14B2Z0910F	RES. METAL FILM 9.1K 1% 1/8W
R62	RD14B3Z0302J	RES. CARBON 3K 5% 1/8W
R63	NO USE	
R64	RN14BXEC7500F	RES. METAL FILM 750 1% 1/8W
R67	RS14GB3DR15J	RES. METAL FILM 0.15 5% 2W
R68	RD14B3Z0333J	RES. CARBON 33K 5% 1/8W
R74	RD14B3Z0103J	RES. CARBON 10K 5% 1/8W
R75	RD14DB2E202J	RES. CARBON 2K 5% 1/2W

REF.NO	PARTS NO	NAME & DESCRIPTION
R85	RD14DB2H101J	RES. CARBON 100 5% 1/2W
R86	RS14GB3A102J	RES. METAL FILM 1K 5% 1W
R87	RS14GB3A102J	RES. METAL FILM 1K 5% 1W
R88	RD14B3Z0104J	RES. CARBON 100K 5% 1/8W
R01	RD14B3Z0103J	RES. CARBON 10K 5% 1/8W
R04	RD14B3Z0100J	RES. CARBON 10 5% 1/8W
R05	NO USE	
R06	RD14B3Z0912J	RES. CARBON 9.1K 5% 1/8W
R32A	RS14GB3AR33J	RES. METAL FILM 0.33 5% 1W
R32B	RS14GB3AR33J	RES. METAL FILM 0.33 5% 1W
R01	RN14B2Z0100F	RES. METAL FILM 100K 1% 1/8W
RTH1	100B-5	THERMISTER
RY1	S76-0604-08	RELAY
RY2	S76-0604-08	RELAY
RY3	S76-0604-08	RELAY
RY4	S76-0630-08	RELAY
SW2	S31-1512-08	MASTER/SLAVE SWITCH
VR1	B12-1564-08	RES. SEMI FIXED 1KB
VR2	B12-5547-08	RES. SEMI FIXED 100KB
VR3	NO USE	
VR4	B12-3567-08	RES. SEMI FIXED 10KB
VR5	B12-3567-08	RES. SEMI FIXED 10KB

PARTS LIST

PA18-6A
Y86-1940-00

REF.NO	PARTS NO	NAME & DESCRIPTION
	A01-1238-08	COVER
	A63-0121-08	FRONT PANEL
	B11-0528-08	FILTER
	B40-2737-24	SERIAL NO. PLATE
	B42-3738-08	FUSE RATING LABEL
	B42-3885-08	EXTERNAL CONTROL LABEL
	B42-6040-08	RATING;AC100V 50/60HZ 200W
	B42-6041-08	RATING;AC120V 50/60HZ 200W
	B42-6042-08	RATING;AC220V 50/60HZ 200W
	B42-6043-08	RATING;AC240V 50/60HZ 200W
	B42-6044-08	RATING;AC120V 60HZ 200W
	B63-0179-00	INSTRUCTION MANUAL;JAPANESE
	B63-0178-00	INSTRUCTION MANUAL;ENGLISH
	E12-0401-15	SENSOR PLUG
	E21-0670-03	TERMINAL,RED
	E21-0671-03	TERMINAL,BLACK
	E21-0672-03	TERMINAL,WHITE
	E28-0504-94	SHORTING BAR
	E28-0542-08	LUG;M3
	E30-0927-85	UL/CSA POWER CORD
	E30-0545-05	JIS POWER CORD
	E30-0571-15	SAA POWER CORD
	E30-1815-05	CEE POWER CORD
	E30-1857-05	BS POWER CORD
	F01-0886-08	HEAT SINK
	F05-3022-05	FUSE(6X32MM) 3A/250V
	F11-1241-08	SHIELD CASE
	F20-0517-08	INSULATOR;FOR Q5/Q11
	F20-0518-08	INSULATOR;FOR Q115/Q118/Q11C
	F50-0094-08	FUSE(5X20MM) 5A/250V
	F51-0010-08	FUSE(5X20MM) 5A/125V
	B10-2856-08	FOAMED STYRENE PAD (FRONT)
	B10-2857-08	FOAMED STYRENE PAD (REAR)
	B26-1734-08	VINYL COVER
	B50-0120-08	CARTON BOX
	J02-0529-08	FOOT
	J19-1671-08	CLAMPER;FOR 2-CORE AC CORD
	J19-1672-08	CLAMPER;FOR 3-CORE AC CORD
	J21-4720-08	BRACKET;FOR P.C.B
	J21-4795-08	BRACKET;FOR AC CORD BUSHING
	J28-0016-08	BRACKET;FOR EXT. CONTROL BOARD
	J50-0532-05	VOLUME SPACER
	J50-0533-05	VOLUME SPACER;FOR VR01
	J42-0683-05	BUSHING;FOR 2-CORE AC CORD
	J42-0685-05	BUSHING;FOR 3-CORE AC CORD
	K01-4417-05	HANDLE
	K21-0807-14	KNOB
	K21-0911-04	KNOB;FINE/CURRENT
	K27-0509-04	PUSH BUTTON,ORANGE;POWER
	K27-0567-04	BUTTON,RED;OUTPUT
	L07-1524-08	POWER TRANSFORMER
	N09-0718-05	SCREW,SEMS PAN HD M3X6
	N09-0720-05	SCREW,SEMS PAN HD M4X10
	N09-0757-05	SCREW,SEMS BINDING TAPTITE 3X6
	N09-0777-05	SCREW,SEMS PAN HD M3X6
	N09-0780-05	SCREW,SEMS PAN HD M3X10
	N09-0797-05	SCREW,SEMS TAPTITE 3X10
	N14-0404-04	FLANGE NUT M3
	N32-3006-41	SCREW,FLAT HD M3X6
	N89-3006-41	SCREW,BINDING TAPTITE 3X6
	N89-3012-41	SCREW,BINDING TAPTITE 3X12
	S40-2533-08	PUSH SWITCH;POWER
	W02-2275-08	EXT. CONTROL UNIT
	W02-2278-08	AMP UNIT
	W02-2364-08	D.P.M. UNIT
VR01	B20-3562-08	VOLUME 10K
VR02	B20-1568-08	VOLUME 1K
VR03	B20-3564-08	VOLUME 10K

PA18-6A AMP UNIT
W02-2278-08

REF.NO	PARTS NO	NAME & DESCRIPTION
	E18-0182-08	SENSING TERMINAL
	E21-0674-05	EXTERNAL OUTPUT TERMINAL
	E40-7141-05	PIN CONNECTOR 2P(LINE VOLTAGE)
	E40-7142-05	PIN CONNECTOR 1P(LINE VOLTAGE)
	E40-7171-08	PIN CONNECTOR 2P
	J13-0515-08	FUSE CLIP;FOR EX30MM
	J73-0269-08	PCB (UNMOUNTED)
	R92-0150-05	JUMPING RES. ZERO OHM(0 OHM)
	R92-1061-05	JUMPING RES. ZERO OHM(0 OHM)
C1	C90-3010-08	CAP. ELECTRO 1000 105'C 35V
C2	C0H2AK1H472K	CAP. MYLAR 4700P 10% 50V
C3	C81-2556-08	CAP. CERAMIC 0.1 0.25P 50V
C4	C0H2AK1H472K	CAP. MYLAR 4700P 10% 50V
C5	C0H2AK1H103K	CAP. MYLAR 0.01 10% 50V
C6	NO USE	
C7	C90-3020-08	CAP. ELECTRO 100 105'C 25V
C8	CFH3AK2ER22K	CAP. POLYESTER 0.22P 10% 250V
C9	NO USE	
C10	C90-4501-08	CAP. ELECTRO 6800 35V
C11	CFH3AK1JR22K	CAP. POLYESTER 0.22P 10% 63V
C12	C90-3033-08	CAP. ELECTRO 220 105'C 25V
C13	C90-3033-08	CAP. ELECTRO 220 105'C 25V
C14	CFH3AK1J104K	CAP. POLYESTER 0.1 10% 63V
C15	CFH3AK1J104K	CAP. POLYESTER 0.1 10% 63V
C16	NO USE	
C17	C90-3034-08	CAP. ELECTRO 100 105'C 16V
C18	C90-3034-08	CAP. ELECTRO 100 105'C 16V
C19	C90-3022-08	CAP. ELECTRO 4.7 105'C 50V
C20	CFH3AK1J104K	CAP. POLYESTER 0.1 10% 63V
C21	NO USE	
C22	C91-2558-08	CAP. CERAMIC 0.1 0.25P 50V
C26	C90-3174-08	CAP. ELECTRO 10 1% 50V
C27	CK45B1H471K	CAP. CERAMIC 470P 10% 50V
C28	C90-3029-08	CAP. ELECTRO 100 105'C 25V
C29	C91-2558-08	CAP. CERAMIC 0.1 0.25P 50V
C30	C90-4502-08	CAP. ELECTRO 1000 35V
C31	C90-3020-08	CAP. ELECTRO 100 105'C 25V
C32	CFH3AK1J182K	CAP. POLYESTER 1P 10% 63V
CN1	E40-7184-08	PIN CONNECTOR 5P
CN2	E40-7327-08	PIN CONNECTOR 12P
CN3	E40-7328-08	PIN CONNECTOR 15P
CN4	NO USE	
CN5	E40-7219-08	PIN CONNECTOR 3P
CN6	E40-7219-08	PIN CONNECTOR 3P
CN7	E40-7469-08	PIN CONNECTOR 4P
CN8	E40-7469-08	PIN CONNECTOR 4P
CN11	E40-7332-08	PIN CONNECTOR 4P
CN12	E40-7333-08	PIN CONNECTOR 2P
CN13	E40-7333-08	PIN CONNECTOR 2P
CN14	E40-7333-08	PIN CONNECTOR 2P
CN20	E40-3240-05	PIN CONNECTOR 5P
CN6P	E40-7333-08	PIN CONNECTOR 2P
CN6P1	E40-7332-08	PIN CONNECTOR 2P
C01	C90-3018-08	CAP. ELECTRO 1 105'C 50V
C01	C81-1202-08	CAP. CERAMIC 0.1 20% 250V
C02	NO USE	
C03	C90-3041-08	CAP. ELECTRO 2.2 105'C 50V
D1	1R4R42	DIODE,STACK
D2	ERA15-01	DIODE
D3	1SS270A	DIODE
D4	1SS270A	DIODE
D5	1SS270A	DIODE
D6	1SS270A	DIODE
D7	1SS270A	DIODE
D8	NO USE	
D9	D1SR60	DIODE,STACK
D10	ERA15-01	DIODE
D11	1R4R42	DIODE,STACK
D14	1SS270A	DIODE
D15	1SS270A	DIODE
D15	1SS270A	DIODE
D24	1SS270A	DIODE
D25	1SS270A	DIODE
D26	NO USE	
D27	ERA15-01	DIODE
D28	ERA15-01	DIODE
D29	ERA15-01	DIODE
D30	ERA15-01	DIODE
D31	ERA15-01	DIODE
D32	ERA15-01	DIODE
D33	ERA15-01	DIODE
D34	1SS270A	DIODE
D35	NO USE	

PARTS LIST

REF.NO	PARTS NO	NAME & DESCRIPTION
D36	EX33	DIODE
D37	ERA15-01	DIODE
D38	1SS270A	DIODE
D39	ERA15-01	DIODE
D01	30D1	DIODE
IC1	UPC151C	IC,OP AMP
IC2	UPC151C	IC,OP AMP
IC3	UPC1093J	IC,VARIABLE SHUNT REGULATOR
IC4	UPC7805SE	IC,3-TERMINAL REGULATOR
IC5	UPC7905SE	IC,3-TERMINAL REGULATOR
IC6	UPC1093J	IC,VARIABLE SHUNT REGULATOR
IC7	LM507CN	IC,OP AMP
IC8	UPC1093J	IC,VARIABLE SHUNT REGULATOR
IC9	NJ178L12A	IC,TERMINAL FIXED VOLTAGE REG.
Q1	2SC1815(GR)	TR. SI, NPN
Q2	2SC1815(GR)	TR. SI, NPN
Q3	2SC1815(GR)	TR. SI, NPN
Q4	2SC1815(GR)	TR. SI, NPN
Q5	2SC1815(GR)	TR. SI, NPN
Q6	2SD1148(O)	TR. SI, NPN
Q7	2SC2238(Y)	TR. SI, NPN
Q8	2SC3421(Y)	TR. SI, NPN
Q9	2SC1815(GR)	TR. SI, NPN
Q10	2SC1815(GR)	TR. SI, NPN
Q11	2SD1148(O)	TR. SI, NPN
Q12	NO USE	
Q13	2SC1815(GR)	TR. SI, NPN
Q17	DTA143EF	TR. DIGITAL
Q11A	2SD1148(O)	TR. SI, NPN
Q11B	2SD1148(O)	TR. SI, NPN
Q11C	2SD1148(O)	TR. SI, NPN
R1	RD14B2C122J	RES. CARBON 1.2K 5% 1/6W
R2	RD14B2C123J	RES. CARBON 12K 5% 1/6W
R3	RD14B2C302J	RES. CARBON 3K 5% 1/6W
R4	RD14B2C510J	RES. CARBON 51 5% 1/6W
R5	RD14B2C102J	RES. CARBON 1K 5% 1/6W
R6	RD14B2C273J	RES. CARBON 27K 5% 1/6W
R7	RN14B2C5101F	RES. METAL FILM 5.1K 1% 1/6W
R8	RD14B2C202J	RES. CARBON 2K 5% 1/6W
R9	RD14B2C102J	RES. CARBON 1K 5% 1/6W
R10	RD14B2C121J	RES. CARBON 120 5% 1/6W
R11	RD14B2C513J	RES. CARBON 51K 5% 1/6W
R12	NO USE	
R13	RD14B2C202J	RES. CARBON 2K 5% 1/6W
R14	RD14B2C152J	RES. CARBON 1.5K 5% 1/6W
R15	RD14B2C102J	RES. CARBON 1K 5% 1/6W
R16	RD14B2C512J	RES. CARBON 5.1K 5% 1/6W
R17	NO USE	
R18	RD14B2C513J	RES. CARBON 51K 5% 1/6W
R19	RD14B2C103J	RES. CARBON 10K 5% 1/6W
R20	RD14B2C102J	RES. CARBON 1K 5% 1/6W
R21	RN14B2G3903F	RES. METAL FILM 390K 1% 1/6W
R22	RD14B2C102J	RES. CARBON 1K 5% 1/6W
R23	RN14B2C9101F	RES. METAL FILM 9.1K 1% 1/6W
R24	RN14B2C3001F	RES. METAL FILM 3K 1% 1/6W
R27	RD14B2C103J	RES. CARBON 10K 5% 1/6W
R28	RD14B2C103J	RES. CARBON 10K 5% 1/6W
R29	RS14GB3B152J	RES. METAL FILM 1.5K 5% 2W
R30	RS14GB3A333J	RES. METAL FILM 0.33 5% 1W
R31	NO USE	
R32	RS14GB3A333J	RES. METAL FILM 0.33 5% 1W
R33	NO USE	
R34	RD14B2C122J	RES. CARBON 1.2K 5% 1/6W
R35	RD14B2C123J	RES. CARBON 12K 5% 1/6W
R36	RD14B2C302J	RES. CARBON 3K 5% 1/6W
R37	RD14B2C510J	RES. CARBON 51 5% 1/6W
R38	RD14B2C123J	RES. CARBON 12K 5% 1/6W
R39	RD14B2C273J	RES. CARBON 27K 5% 1/6W
R43	RD14B2C103J	RES. CARBON 10K 5% 1/6W
R44	RD14B2C101J	RES. CARBON 100 5% 1/6W
R45	RD14B2B202J	RES. CARBON 2K 5% 1/2W
R51	RN14B2C2401F	RES. METAL FILM 2.4K 1% 1/6W
R52	RN14B2C3001F	RES. METAL FILM 3K 1% 1/6W
R53	RD14B2C911J	RES. CARBON 910 5% 1/6W
R54	RD14B2C101J	RES. CARBON 100 5% 1/6W
R55	RN14BX2C5102F	RES. METAL FILM 51K 1% 1/6W
R56	RN14BX2C5102F	RES. METAL FILM 51K 1% 1/6W
R57	NO USE	
R58	RN14BX2C5102F	RES. METAL FILM 51K 1% 1/6W
R59	RN14BX2C5102F	RES. METAL FILM 51K 1% 1/6W
R60	RD14B2C511J	RES. CARBON 510 5% 1/6W
R61	RN14BX2C9101F	RES. METAL FILM 9.1K 1% 1/6W
R62	RD14B3D3022	RES. CARBON 3K 5% 1/6W
R63	NO USE	
R64	RN14BX2C7500F	RES. METAL FILM 750 1% 1/6W
R67	RS14GB3D810J	RES. METAL FILM 0.1 5% 2W

REF.NO	PARTS NO	NAME & DESCRIPTION
R68	RD14B2C273J	RES. CARBON 27K 5% 1/6W
R74	RD14B2C103J	RES. CARBON 10K 5% 1/6W
R75	RD14BB2H202J	RES. CARBON 2K 5% 1/2W
R85	RD14BB2B101J	RES. CARBON 100 5% 1/2W
R86	RS14GB3A102J	RES. METAL FILM 1K 5% 1W
R87	RS14GB3A102J	RES. METAL FILM 1K 5% 1W
R88	RD14B2C104J	RES. CARBON 100K 5% 1/6W
R91	RD14B2C103J	RES. CARBON 10K 5% 1/6W
R94	RD14B2C100J	RES. CARBON 10 5% 1/6W
R95	NO USE	
R96	RD14BB2C912J	RES. CARBON 9.1K 5% 1/6W
R32A	RS14GB3A333J	RES. METAL FILM 0.33 5% 1W
X32B	RS14GB3A333J	RES. METAL FILM 0.33 5% 1W
X32C	RS14GB3A333J	RES. METAL FILM 0.33 5% 1W
R01	RN14BX2C1003F	RES. METAL FILM 100K 1% 1/6W
RY01	109D-5	TKEMNISTER
RY1	S76-0504-05	RELAY
RY2	S76-0504-05	RELAY
RY3	S76-0504-05	RELAY
RY4	S76-0530-05	RELAY
SW2	S31-1512-05	MASTER/SLAVE SWITCH
VR1	R12-1564-05	RES, SEMI FIXED 1KB
VR2	R12-5547-05	RES, SEMI FIXED 100KB
VR3	NO USE	
VR4	R12-3567-05	RES, SEMI FIXED 10KB
VR5	R12-3567-05	RES, SEMI FIXED 10KB

PARTS LIST

REF.NO	PARTS NO	NAME & DESCRIPTION
D38	1SS270A	DIODE
D39	ERA15-01	DIODE
D01	ERA15-01	DIODE
IC1	RPC151C	IC,OP AMP
IC2	RPC151C	IC,OP AMP
IC3	RPC1093J	IC,VARIABLE SHUNT REGULATOR
IC4	MPC78M05B	IC,3-TERMINAL REGULATOR
IC5	MPC79M05B	IC,3-TERMINAL REGULATOR
IC6	RPC1093J	IC,VARIABLE SHUNT REGULATOR
IC7	LM607CN	IC,OP AMP
IC8	RPC1093J	IC,VARIABLE SHUNT REGULATOR
IC9	RA178L12A	IC,TERMINAL,FIXED VOLTAGE REG.
Q1	2SC1815(GR)	TR. SI. NPN
Q2	2SC1815(GR)	TR. SI. NPN
Q3	2SC1815(GR)	TR. SI. NPN
Q4	2SC1815(GR)	TR. SI. NPN
Q5	2SC1815(GR)	TR. SI. NPN
Q6	2SD114B(O)	TR. SI. NPN
Q7	2SC2236(Y)	TR. SI. NPN
Q8	2SC3421(T)	TR. SI. NPN
Q9	2SC1815(GR)	TR. SI. NPN
Q10	2SC1815(GR)	TR. SI. NPN
Q11	2SD114B(O)	TR. SI. NPN
Q12	NO USE	
Q13	2SC1815(GR)	TR. SI. NPN
Q17	DTA143EF	TR. DIGITAL
R1	RD14BB2C122J	RES. CARBON 1.2K 5% 1/6W
R2	RD14BB2C123J	RES. CARBON 12K 5% 1/6W
R3	RD14BB2C362J	RES. CARBON 3K 5% 1/6W
R4	RD14BB2C510J	RES. CARBON 51 5% 1/6W
R5	RD14BB2C123J	RES. CARBON 12K 5% 1/6W
R6	RD14BB2C272J	RES. CARBON 27K 5% 1/6W
R7	RN14BK2C2401F	RES. METAL FILM 2.4K 1% 1/6W
R8	RD14BB2C202J	RES. CARBON 2K 5% 1/6W
R9	RD14BB2C103J	RES. CARBON 1K 5% 1/6W
R10	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R11	RD14BB2C513J	RES. CARBON 51K 5% 1/6W
R12	NO USE	
R13	RD14BB2C202J	RES. CARBON 2K 5% 1/6W
R14	RD14BB2C152J	RES. CARBON 1.5K 5% 1/6W
R15	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R16	RD14BB2C512J	RES. CARBON 5.1K 5% 1/6W
R17	NO USE	
R18	RD14BB2C513J	RES. CARBON 51K 5% 1/6W
R19	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R20	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R21	RN14BK2C2703F	RES. METAL FILM 270K 1% 1/6W
R22	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R23	RN14BK2C9191F	RES. METAL FILM 9.1K 1% 1/6W
R24	RN14BK2C3003F	RES. METAL FILM 3K 1% 1/6W
R27	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R28	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R29	RS14GB3D392J	RES. METAL FILM 3.9K 5% 2W
R30	RS14GB3AR47J	RES. METAL FILM 0.47 5% 1W
R31	NO USE	
R32	RS14GB3AR47J	RES. METAL FILM 0.47 5% 1W
R33	NO USE	
R34	RD14BB2C123J	RES. CARBON 12K 5% 1/6W
R35	RD14BB2C123J	RES. CARBON 12K 5% 1/6W
R36	RD14BB2C302J	RES. CARBON 3K 5% 1/6W
R37	RD14BB2C510J	RES. CARBON 51 5% 1/6W
R38	RD14BB2C333J	RES. CARBON 33K 5% 1/6W
R39	RD14BB2C273J	RES. CARBON 27K 5% 1/6W
R43	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R44	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R45	RD14DB2B822J	RES. CARBON 8.2K 5% 1/2W
R51	RN14BK2C2001F	RES. METAL FILM 2.4K 1% 1/6W
R52	RN14BK2C3001F	RES. METAL FILM 3K 1% 1/6W
R53	RD14BK2C911J	RES. CARBON 910 5% 1/6W
R54	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R55	RN14BK2C5102F	RES. METAL FILM 51K 1% 1/6W
R56	RN14BK2C5102F	RES. METAL FILM 51K 1% 1/6W
R57	NO USE	
R58	RN14BK2C5102F	RES. METAL FILM 51K 1% 1/6W
R59	RN14BK2C5102F	RES. METAL FILM 51K 1% 1/6W
R60	RD14BB2C511J	RES. CARBON 510 5% 1/6W
R61	RN14BK2C9101F	RES. METAL FILM 9.1K 1% 1/6W
R62	RD14BB2C362J	RES. CARBON 3K 5% 1/6W
R63	NO USE	
R64	RN14BK2C8201F	RES. METAL FILM 8.2K 1% 1/6W
R67	RS14GB3HR22J	RES. METAL FILM 0.22 5% 2W
R68	RD14BB2C333J	RES. CARBON 33K 5% 1/6W
R74	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R75	RD14BB2B822J	RES. CARBON 8.2K 5% 1/2W
R85	RD14BD2B101J	RES. CARBON 100 5% 1/2W

REF.NO	PARTS NO	NAME & DESCRIPTION
R86	RS14GB3A102J	RES. METAL FILM 1K 5% 1W
R87	RS14GB3A102J	RES. METAL FILM 1K 5% 1W
R88	RD14BB2C104J	RES. CARBON 100K 5% 1/6W
R91	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R94	RD14BB2C510J	RES. CARBON 51 5% 1/6W
R95	NO USE	
R96	RD14BB2C912J	RES. CARBON 9.1K 5% 1/6W
RD1	RN14BE2C1003F	RES. METAL FILM 100K 1% 1/6W
RTH1	103D-5	THERMISTER
RY1	S76-0604-08	RELAY
RY2	S76-0604-08	RELAY
RY3	S76-0604-08	RELAY
RY4	S76-0639-08	RELAY
SW2	S31-1512-08	MASTER/SLAVE SWITCH
VR1	R12-1564-08	RES. SEMI FIXED 1KB
VR2	R12-5547-08	RES. SEMI FIXED 100KB
VR3	NO USE	
VR4	R12-3567-08	RES. SEMI FIXED 10KB
VR5	R12-3867-08	RES. SEMI FIXED 10KB

PARTS LIST

PA36-3A

Y86-1960-00

REF.NO	PARTS NO	NAME & DESCRIPTION
	A01-1238-08	COVER
	A63-0123-08	FRONT PANEL
	B11-0528-08	FILTER
	B48-2737-24	SERIAL NO. PLATE
	B42-3738-08	FUSE RATING LABEL
	B42-3866-08	EXTERNAL CONTROL LABEL
	B42-6045-08	RATING:AC100V 50/60HZ 170W
	B43-6046-08	RATING:AC120V 50/60HZ 170W
	B42-6047-08	RATING:AC220V 50/60HZ 170W
	B42-6048-08	RATING:AC230V 50/60HZ 170W
	B42-6049-08	RATING:AC240V 60HZ 170W
	B63-0178-00	INSTRUCTION MANUAL;JAPANESE
	B63-0176-00	INSTRUCTION MANUAL;ENGLISH
	E12-0401-15	SENSOR PLUG
	E21-0670-03	TERMINAL,RED
	E21-0671-03	TERMINAL,BLACK
	E21-0672-03	TERMINAL,WHITE
	E28-0566-04	SHORTING BAR
	E28-0542-08	LEG:M3
	E30-6027-35	UL/CSA POWER CORD
	E30-6046-05	JIS POWER CORD
	E30-6471-15	SAA POWER CORD
	E39-1815-05	CEE POWER CORD
	E39-1867-05	BS POWER CORD
	F01-0886-08	HEAT SINK
	F05-3022-05	FUSE(5X20MM) 3A/250V
	F11-1244-08	SHIELD CASE
	F28-0517-08	INSULATOR:FOR Q6/Q11
	F28-0518-08	INSULATOR:FOR Q11L/Q11R/Q11C
	F56-0004-05	FUSE(5X20MM) 3A/250V
	F51-0010-08	FUSE(GX30MM) 5A/125V
	E10-2856-08	FOAMING STYRENE PAD (FRONT)
	E10-2857-08	FOAMED STYRENE PAD (REAR)
	E28-1734-08	VINYL COVER
	E53-0122-08	CARTON BOX
	J02-0526-05	FOOT
	J19-1671-08	CLAMPER:FOR 2-CORE AC CORD
	J19-1672-08	CLAMPER:FOR 3-CORE AC CORD
	J21-4726-08	BRACKET:FOR P.C.B
	J21-4756-08	BRACKET:FOR AC CORD BUSHING
	J29-0516-05	BRACKET:FOR EXT. CONTROL BOARD
	J30-0532-08	VOLUME SPACER
	J30-0535-08	VOLUME SPACER;FOR Y801
	J42-0083-05	BUSHING:FOR 2-CORE AC CORD
	K01-0417-05	HANDLE
	K21-0887-14	KNOB
	K21-0911-04	KNOB;FINE/CURRENT
	K27-0509-04	PUSH BUTTON,ORANGE;POWER
	K27-0537-04	BUTTON,RED;OUTPUT
	L07-1526-08	POWER TRANSFORMER
	N09-0718-05	SCREW,SEMS PAN HD M3X6
	N09-0720-05	SCREW,SEMS PAN HD M4X10
	N09-0757-05	SCREW,SEMS BINDING TAPTITE 3X6
	N09-0777-05	SCREW,SEMS PAN HD M4X6
	N09-0789-05	SCREW,SEMS PAN HD M3X10
	N09-0707-05	SCRTW,SEMS TAPTITE 3X10
	N14-9004-04	FLANGE NUT M3
	N33-3006-41	SCREW,FLAT HD M3X6
	N89-3006-41	SCREW,BINDING TAPTITE 3X6
	N89-3012-41	SCREW,BINDING TAPTITE 3X12
	S40-2533-08	PUSH SWITCH;POWER
	W02-2276-08	EXT. CONTROL UNIT
	W02-2280-08	AMP UNIT
	W02-2303-08	D.P.M. UNIT
VR01	B29-3503-08	VOLUME 10K
VR02	B29-1508-08	VOLUME 1K
VR03	B29-3504-08	VOLUME 10K

PA36-3A AMP UNIT

W02-2280-08

REF.NO	PARTS NO	NAME & DESCRIPTION
	E16-0182-08	SENSING TERMINAL
	E21-0674-08	EXTERNAL OUTPUT TERMINAL
	E40-7141-08	PIN CONNECTOR 3P(LINE VOLTAGE)
	E40-7142-08	PIN CONNECTOR 2P(LINE VOLTAGE)
	E40-7171-08	PIN CONNECTOR 2P
	J13-0518-08	FUSE CLIP;FOR 6X30MM
	J72-0260-08	PCB (UNMOUNTED)
	RM2-0150-05	JUMPING RES. ZERO OHM(5MM)
	RM2-1061-05	JUMPING RES. ZERO OHM(5MM)
C1	C90-3018-08	CAP. ELECTRO 1000 105°C 35V
C2	CQ92M1H103K	CAP. MYLAR 0.01 10% 50V
C3	C91-2559-08	CAP. CERAMIC 0.1 0.25% 50V
C4	CQ92M1H472K	CAP. MYLAR 4700P 10% 50V
C5	CQ92M1H103K	CAP. MYLAR 0.01 10% 50V
C6	NO USE	
C7	C90-3020-08	CAP. ELECTRO 100 105°C 25V
C8	CF92A2KE222K	CAP. POLYESTER 0.22P 10% 250V
C9	NO USE	
C10	C90-4800-08	CAP. ELECTRO 2200 63V
C11	CF92A1JE122K	CAP. POLYESTER 0.22P 10% 63V
C12	C90-3033-08	CAP. ELECTRO 220 105°C 25V
C13	C90-3033-08	CAP. ELECTRO 220 105°C 25V
C14	CF92A1J104K	CAP. POLYESTER 0.1 10% 63V
C15	CF92A1J104K	CAP. POLYESTER 0.1 10% 63V
C16	NO USE	
C17	C90-3034-08	CAP. ELECTRO 100 105°C 16V
C18	C90-3034-08	CAP. ELECTRO 100 105°C 16V
C19	C90-3022-08	CAP. ELECTRO 4.7 105°C 50V
C20	CF92A2J104K	CAP. POLYESTER 0.1 10% 63V
C21	NO USE	
C22	C91-2558-08	CAP. CERAMIC 0.1 0.25% 50V
C26	C90-3174-08	CAP. ELECTRO 10 1% 50V
C27	CQ92M1H472K	CAP. MYLAR 4700P 10% 50V
C28	C90-3020-08	CAP. ELECTRO 100 105°C 25V
C29	C91-2558-08	CAP. CERAMIC 0.1 0.25% 50V
C30	NO USE	
C31	C90-3048-08	CAP. ELECTRO 100 105°C 50V
C32	CF93A1J182K	CAP. POLYESTER 1P 10% 63V
CN1	E40-7184-08	PIN CONNECTOR 8P
CN2	E40-7327-08	PIN CONNECTOR 12P
CN3	E40-7328-08	PIN CONNECTOR 15P
CN4	E40-7125-08	PIN CONNECTOR 2P
CN5	E40-7219-08	PIN CONNECTOR 3P
CN6	E40-7219-08	PIN CONNECTOR 3P
CN7	E40-7220-08	PIN CONNECTOR 4P
CN8	E40-7220-08	PIN CONNECTOR 4P
CN11	E40-7332-08	PIN CONNECTOR 4P
CN12	E40-7333-08	PIN CONNECTOR 2P
CN13	E40-7333-08	PIN CONNECTOR 2P
CN14	E40-7333-08	PIN CONNECTOR 2P
CN20	E40-3240-05	PIN CONNECTOR 5P
CNGP	E40-7333-08	PIN CONNECTOR 2P
CNGP1	E40-7333-08	PIN CONNECTOR 2P
CO1	C90-3018-08	CAP. ELECTRO 1 105°C 50V
CO1	C91-1323-08	CAP. CERAMIC 0.1 20% 250V
CO2	NO USE	
CO3	C90-3041-08	CAP. ELECTRO 2.2 105°C 50V
D1	1S4B42	DIODE,STACK
D2	ERA15-01	DIODE
D3	1SS270A	DIODE
D4	1SS270A	DIODE
D5	1SS270A	DIODE
D6	1SS270A	DIODE
D7	1SS270A	DIODE
D8	NO USE	
D9	D10XB40	DIODE,STACK
D10	ERA15-01	DIODE
D11	1S4B42	DIODE,STACK
D14	1SS270A	DIODE
D15	1SS270A	DIODE
D16	1SS270A	DIODE
D24	1SS270A	DIODE
D25	1SS270A	DIODE
D26	NO USE	
D27	ERA15-01	DIODE
D28	ERA15-01	DIODE
D29	ERA15-01	DIODE
D30	ERA15-01	DIODE
D31	ERA15-01	DIODE
D32	ERA15-01	DIODE
D33	ERA15-01	DIODE
D34	1SS270A	DIODE

PARTS LIST

REF.NO	PARTS NO	NAME & DESCRIPTION
D37	ERA15-01	DIODE
D38	1SS270A	DIODE
D39	ERA15-01	DIODE
B01	30D1	DIODE
IC1	MPC151C	IC,OP AMP
IC2	MPC151C	IC,OP AMP
IC3	UPC1093J	IC,VARIABLE SHUNT REGULATOR
IC4	UPC7806H	IC,3-TERMINAL REGULATOR
IC5	UPC79M05H	IC,3-TERMINAL REGULATOR
IC6	UPC1093J	IC,VARIABLE SHUNT REGULATOR
IC7	LM607CR	IC,OP AMP
IC8	UPC1093J	IC,VARIABLE SHUNT REGULATOR
IC9	HA178L12A	IC,TERMINAL FIXED VOLTAGE REG.
Q1	2SC1815(GR)	TR. SI. NPN
Q2	2SC1815(GR)	TR. SI. NPN
Q3	2SC1815(GR)	TR. SI. NPN
Q4	2SC1815(GR)	TR. SI. NPN
Q5	2SC1815(GR)	TR. SI. NPN
Q6	2SB1148(O)	TR. SI. NPN
Q7	2SC2238(Y)	TR. SI. NPN
Q8	2SC2421(Y)	TR. SI. NPN
Q9	2SC1815(GR)	TR. SI. NPN
Q10	2SC1815(GR)	TR. SI. NPN
Q11	2SB1148(O)	TR. SI. NPN
Q12	NO USE	
Q13	2SC1815(GR)	TR. SI. NPN
Q17	DTA143EF	TR. DIGITAL
Q11A	2SB1148(O)	TR. SI. NPN
Q11B	2SB1148(O)	TR. SI. NPN
Q11C	2SB1148(O)	TR. SI. NPN
R1	RD14BB2C122J	RES. CARBON 1.2K 5% 1/6W
R2	RD14BB2C123J	RES. CARBON 12K 5% 1/6W
R3	RD14BB2C302J	RES. CARBON 3K 5% 1/6W
R4	RD14B52C513J	RES. CARBON 51K 5% 1/6W
R5	RD14BB2C122J	RES. CARBON 12K 5% 1/6W
R6	RD14B62C273J	RES. CARBON 27K 5% 1/6W
R7	RN14B2C2402F	RES. METAL FILM 2.4K 1% 1/6W
R8	RD14BB2C202J	RES. CARBON 2K 5% 1/6W
R9	RD14B92C102J	RES. CARBON 1K 5% 1/6W
R10	RD14B92C242J	RES. CARBON 2.4K 5% 1/6W
R11	RD14B82C513J	RES. CARBON 51K 5% 1/6W
R12	NO USE	
R13	RD14B92C202J	RES. CARBON 2K 5% 1/6W
R14	RD14B82C152J	RES. CARBON 1.5K 5% 1/6W
R15	RD14B92C102J	RES. CARBON 1K 5% 1/6W
R16	RD14B82C512J	RES. CARBON 5.1K 5% 1/6W
R17	NO USE	
R18	RD14B82C513J	RES. CARBON 51K 5% 1/6W
R19	RD14B82C103J	RES. CARBON 10K 5% 1/6W
R20	RD14B82C102J	RES. CARBON 1K 5% 1/6W
R21	RN14B62C3309F	RES. METAL FILM 330R 1% 1/6W
R22	RD14B82C102J	RES. CARBON 1K 5% 1/6W
R23	RN14B62C9101F	RES. METAL FILM 9.1K 1% 1/6W
R24	RN14B62C3001F	RES. METAL FILM 3K 1% 1/6W
R27	RD14B82C102J	RES. CARBON 1K 5% 1/6W
R28	RD14B82C163J	RES. CARBON 16K 5% 1/6W
R29	RS14GB3D39ZJ	RES. METAL FILM 3.9R 5% 2W
R30	RS14GB3AR51J	RES. METAL FILM 0.51 5% 1W
R31	NO USE	
R32	RS14GB3AR51J	RES. METAL FILM 0.51 5% 1W
R33	NO USE	
R34	RD14B82C122J	RES. CARBON 1.2K 5% 1/6W
R35	RD14B82C123J	RES. CARBON 12K 5% 1/6W
R36	RD14B82C282J	RES. CARBON 3K 5% 1/6W
R37	RD14B82C513J	RES. CARBON 51K 5% 1/6W
R38	RD14B82C333J	RES. CARBON 33K 5% 1/6W
R39	RD14B82C273J	RES. CARBON 27K 5% 1/6W
R43	RD14B82C103J	RES. CARBON 10K 5% 1/6W
R44	RD14B82C101J	RES. CARBON 100 5% 1/6W
R45	RD14B82B822J	RES. CARBON 8.2K 5% 1/2W
R51	RN14B62C2401F	RES. METAL FILM 2.4K 1% 1/6W
R52	RN14B62C3001F	RES. METAL FILM 3K 1% 1/6W
R53	RD14B82C911J	RES. CARBON 910 5% 1/6W
R54	RD14B82C101J	RES. CARBON 100 5% 1/6W
R55	RN14BX2C5102F	RES. METAL FILM 51K 1% 1/6W
R56	RN14BX2C5102F	RES. METAL FILM 51K 1% 1/6W
R57	NO USE	
R58	RN14BX2C5102F	RES. METAL FILM 51K 1% 1/6W
R59	RN14BX2C5102F	RES. METAL FILM 51K 1% 1/6W
R60	RD14B82C511J	RES. CARBON 510 5% 1/6W
R61	RN14BX2C9101F	RES. METAL FILM 9.1K 1% 1/6W
R62	RD14B82C302J	RES. CARBON 3K 5% 1/6W
R63	NO USE	
R64	RN14BX2C7500F	RES. METAL FILM 750 1% 1/6W
R67	RS14GB3D15ZJ	RES. METAL FILM 0.15 5% 2W
R68	RD14B82C333J	RES. CARBON 33K 5% 1/6W

REF.NO	PARTS NO	NAME & DESCRIPTION
R74	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R75	RD14BB2B822J	RES. CARBON 8.2K 5% 1/2W
R85	RD14BB2E101J	RES. CARBON 100 5% 1/2W
R86	RS14GB3A102J	RES. METAL FILM 1K 5% 1W
R87	RS14GB3A102J	RES. METAL FILM 1K 5% 1W
R88	RD14B82C103J	RES. CARBON 100K 5% 1/6W
B01	RD14B82C103J	RES. CARBON 10K 5% 1/6W
R84	RD14BB2C513J	RES. CARBON 51K 5% 1/6W
R95	NO USE	
R96	RD14BB2C912J	RES. CARBON 9.1K 5% 1/6W
R321	RS14GB3AR51J	RES. METAL FILM 0.51 5% 1W
R322	RS14GB3AR51J	RES. METAL FILM 0.51 5% 1W
R32C	RS14GB3AR51J	RES. METAL FILM 0.51 5% 1W
RO1	RN14BB2C1003F	RES. METAL FILM 100K 1% 1/6W
RTH1	1000-5	THERMISTER
RY1	S7G-0604-08	RELAY
RY2	S7G-0604-08	RELAY
RY3	S7G-0604-08	RELAY
RY4	S7G-0030-08	RELAY
SW2	S3J-1512-08	MASTER/SLAVE SWITCH
VR1	R12-1564-08	RES. SEMI FIXED 1KB
VR2	R12-5047-08	RES. SEMI FIXED 100KB
VR3	NO USE	
VR4	R12-3567-08	RES. SEMI FIXED 10KB
VR5	R12-3567-08	RES. SEMI FIXED 10KB

PARTS LIST

PA70-1A
Y86-1970-00

REF.NO	PARTS NO	NAME & DESCRIPTION
	A01-1237-08	CASE
	A03-0124-08	FRONT PANEL
	B31-0635-08	FILTER
	B46-2737-24	SERIAL NO. PLATE
	B42-3733-08	FUSE RATING LABEL
	B42-3866-08	EXTERNAL CONTROL LABEL
	B42-6056-08	RATING:AC100V 50/60HZ 110W
	B42-6051-08	RATING:AC120V 50/60HZ 110W
	B42-6052-08	RATING:AC220V 50/60HZ 110W
	B42-6053-08	RATING:AC240V 50/60HZ 110W
	B42-6054-08	RATING:AC120V 60HZ 110W
	B63-0175-00	INSTRUCTION MANUAL:JAPANESE
	B63-0176-00	INSTRUCTION MANUAL:ENGLISE
	E32-0401-15	SENSOR PLUG
	E21-0579-03	TERMINAL,RED
	E21-0671-03	TERMINAL,BLACK
	E21-0672-03	TERMINAL,WHITE
	H28-0506-04	SHOOTING BAR
	H29-0542-08	LUG:M3
	E30-0027-35	UL/CSA POWER CORD
	E30-0949-05	JIS POWER CORD
	E30-0571-18	SAA POWER CORD
	E30-1615-05	CEE POWER CORD
	E39-1867-05	BS POWER CORD
	F01-0885-08	HEAT SINK
	F05-2021-08	FUSE(S120HM) 2A/250V
	F05-2023-05	FUSE(S132HM) 2A/250V
	F11-1243-08	SHIELD CASE
	F29-0517-08	INSULATOR:FOR QS/Q11
	F29-0518-08	INSULATOR:FOR Q11A/Q11B/Q11C
	F51-0009-08	FUSE(6X30MM) 3A/125V
	B10-2853-08	FOAMED STYRENE PAD (FRONT)
	B10-2854-08	FOAMED STYRENE PAD (REAR)
	B30-1734-08	VINYL COVER
	B53-0123-08	CARTON BOX
	J02-0529-08	FOOT
	J19-1671-08	CLAMPER;FOR 2-CORE AC CORD
	J19-1672-08	CLAMPER;FOR 3-CORE AC CORD
	J21-4736-08	BRACKET;FOR P.C.B
	J21-4758-08	BRACKET;FOR AC CORD BUSHING
	J28-0516-08	BRACKET;FOR EXT. CONTROL BOARD
	J28-0518-08	BRACKET;FOR P.C.B
	J30-0532-08	VOLUME SPACER
	J30-0535-08	VOLUME SPACER;FOR VR01
	J42-0083-05	BUSHING;FOR 2-CORE AC CORD
	K01-0417-05	HANDLE
	X21-0907-14	KNOB
	X21-0911-04	KNOB;FINE/COARSE
	X27-0509-04	PUSH BUTTON;ORANGE;POWER
	X27-0557-04	BUTTON,RED;OUTPUT
	L07-1527-08	POWER TRANSFORMER
	B89-0718-05	SCREW,SEMS PAN HD M3X6
	B88-0726-05	SCREW,SEMS PAN HD M4X10
	B88-0767-05	SCREW,SEMS BINDING TAPTITE 3X6
	B88-0777-05	SCREW,SEMS PAN HD M4X6
	B89-0769-05	SCREW,SEMS PAN HD M3X10
	B89-0787-08	SCREW,SEMS TAPTITE 3X10
	N19-0404-04	FLANGE NUT M3
	B32-3006-41	SCREW,FLAT SD M3X6
	B88-3006-41	SCREW,BINDING TAPTITE 3X6
	B88-3012-41	SCREW,BINDING TAPTITE 3X12
	S40-2533-08	PUSH SWITCH;POWER
	W02-2276-08	EXT. CONTROL UNIT
	W02-2281-08	AMP UNIT
	W02-3303-08	D.P.M. UNIT
VR01	R28-3503-08	VOLUME 10K
VR02	R28-1508-08	VOLUME 1K
VR03	R28-3504-08	VOLUME 10K

PA70-1A AMP UNIT
W02-2281-08

REF.NO	PARTS NO	NAME & DESCRIPTION
	E18-0162-08	SENSING TERMINAL
	E21-0674-08	EXTERNAL OUTPUT TERMINAL
	E46-7141-08	PIN CONNECTOR 2P(LINE VOLTAGE)
	E46-7142-08	PIN CONNECTOR 3P(LINE VOLTAGE)
	E40-7171-08	PIN CONNECTOR 2P
	J13-0818-08	FUSE CLIP;FOR S30HM
	J73-0266-08	PCB (UNMOUNTED)
	N02-0150-05	JUMPING RES. ZERO OHM(0.5W)
	N02-1061-05	JUMPING RES. ZERO OHM(5W)
C1	C90-3023-08	CAP. ELECTRO 470 105°C 35V
C2	CQ92B1E223K	CAP. MYLAR 2200P 10% 50V
C3	C91-2858-08	CAP. CERAMIC 0.1 +80-20% 50V
C4	CQ92B1H472K	CAP. MYLAR 4700P 10% 50V
C5	CQ92B1H103K	CAP. MYLAR 0.01 10% 50V
C6	NO USE	
C7	C90-3029-08	CAP. ELECTRO 100 105°C 25V
C8	CFH9AA3E222K	CAP. POLYESTER 0.22P 10% 250V
C9	NO USE	
C10	C90-3039-08	CAP. ELECTRO 330 105°C 160V
C11	CFH9AN1J822K	CAP. POLYESTER 0.22P 10% 63V
C12	C90-3033-08	CAP. ELECTRO 220 105°C 25V
C13	C90-3033-08	CAP. ELECTRO 220 105°C 25V
C14	CFH9AN1J104K	CAP. POLYESTER 0.1 10% 63V
C15	CFH9AN1J474K	CAP. POLYESTER 0.1 10% 63V
C16	NO USE	
C17	C90-3034-08	CAP. ELECTRO 100 105°C 16V
C18	C90-3034-08	CAP. ELECTRO 100 105°C 16V
C19	C90-3022-08	CAP. ELECTRO 4.7 105°C 50V
C20	CFH9AN1J104K	CAP. POLYESTER 0.1 10% 63V
C21	NO USE	
C22	C91-2559-08	CAP. CERAMIC 0.1 0.25P 50V
C25	C90-4504-08	CAP. ELECTRO 10 100V
C27	NO USE	
C28	C90-3020-08	CAP. ELECTRO 100 105°C 25V
C29	C91-2559-08	CAP. CERAMIC 0.1 0.25P 50V
C30	NO USE	
C31	C90-3048-08	CAP. ELECTRO 100 105°C 100V
C32	CFH9AN1J104K	CAP. POLYESTER 1P 10% 63V
C101	C91-2558-08	CAP. CERAMIC 0.1 10% 630V
CN1	E40-7184-05	PIN CONNECTOR 8P
CN2	E40-7127-08	PIN CONNECTOR 12P
CN3	E40-7126-08	PIN CONNECTOR 15P
CN4	E40-7126-05	PIN CONNECTOR 2P
CN5	E40-7219-08	PIN CONNECTOR 3P
CN6	E40-7219-08	PIN CONNECTOR 3P
CN7	E40-7229-08	PIN CONNECTOR 4P
CN11	E40-7332-08	PIN CONNECTOR 4P
CN12	E40-7333-08	PIN CONNECTOR 2P
CN13	E40-7333-08	PIN CONNECTOR 2P
CN14	E40-7333-08	PIN CONNECTOR 2P
CN20	E40-7340-05	PIN CONNECTOR 5P
CN2P	E40-7333-08	PIN CONNECTOR 2P
CN2P1	E40-7333-08	PIN CONNECTOR 2P
CO1	C90-3038-08	CAP. ELECTRO 1 105°C 100V
CO1	C91-1223-06	CAP. CERAMIC 0.1 20% 250V
CO2	NO USE	
CO3	C90-3047-08	CAP. ELECTRO 2.2 105°C 100V
D1	1S4842	DIODE,STACK
D2	RM15-01	DIODE
D3	1SS270A	DIODE
D4	1SS270A	DIODE
D5	1SS270A	DIODE
D6	1SS270A	DIODE
D7	1SS270A	DIODE
D8	NO USE	
D9	DSS960	DIODE,STACK
D10	RM15-01	DIODE
D11	1S4842	DIODE,STACK
D14	1SS270A	DIODE
D15	1SS270A	DIODE
D16	1SS270A	DIODE
D24	1SS270A	DIODE
D25	1SS270A	DIODE
D26	NO USE	
D27	RM15-01	DIODE
D28	RM15-01	DIODE
D29	RM15-01	DIODE
D30	RM15-01	DIODE
D31	RM15-01	DIODE
D32	RM15-01	DIODE
D33	RM15-01	DIODE

PARTS LIST

PA36-1.2A
Y86-1950-00

REF.NO	PARTS NO.	NAME & DESCRIPTION
	A01-1236-08	COVER
	A03-0122-08	FRONT PANEL
	B11-0525-08	FILTER
	B40-2737-24	SERIAL NO. PLATE
	B42-3740-66	FUSE RATING LABEL
	B42-3880-08	MITERNAL CONTROL LABEL
	B42-6025-08	RATING:AC100V 50/60HZ 73W
	B42-6026-08	RATING:AC120V 50/60HZ 73W
	B42-6027-08	RATING:AC220V 50/60HZ 73W
	B42-6028-08	RATING:AC240V 50/60HZ 73W
	B42-6029-08	RATING:AC100V 60HZ 73W
	B63-0178-00	INSTRUCTION MANUAL:JAPANESE
	B63-0178-30	INSTRUCTION MANUAL:ENGLISH
	E12-0401-15	SENSOR PLATE
	E21-0570-03	TERMINAL,RED
	E21-0571-93	TERMINAL,BLACK
	E21-0572-93	TERMINAL,WHITE
	E25-0506-04	SHORTING BAR
	E29-0542-08	LUG:M3
	E30-0027-35	NL/CSA POWER CORD
	E30-0545-15	JIS POWER CORD
	E30-0571-15	SAA POWER CORD
	E30-1815-05	CEE POWER CORD
	E30-1867-05	BS POWER CORD
	F01-0084-08	HEAT SINK
	F05-1521-08	FUSE(6X32MM) 1.5A/250V
	F11-1243-08	SOLELD CASE
	F20-0517-08	INSULATOR:FOR Q6/Q11
	F50-0003-08	FUSE(5X20MM) 1.5A/250V
	F51-0008-08	FUSE(6X30MM) 2.5A/125V
	H10-2853-08	FOAMED STYRENE PAD (FRONT)
	H10-2854-08	FOAMED STYRENE PAD (REAR)
	H10-2858-08	STYRENE PAD:83X165X8MM
	H10-2858-08	STYRENE PAD:164X209X20MM
	H20-1734-06	VINYL COVER
	H53-0121-08	CARTON BOX
	J02-0529-08	FOOT
	J19-1671-08	CLAMPER;FOR 2-CORE AC CORD
	J19-1672-08	CLAMPER;FOR 3-CORE AC CORD
	J21-4720-06	BRACKET;FOR P.C.B
	J21-4758-08	BRACKET;FOR AC CORD BUSHING
	J29-0518-03	BRACKET;FOR EXT. CONTROL BOARD
	J30-0532-08	VOLUME SPACER
	J30-0635-08	VOLUME SPACER;FOR VR3
	J42-0083-05	BUSHING;FOR 2-CORE AC CORD
	K21-0937-14	KNOB
	K21-0951-04	KNOB;PINE/CHERRY
	K27-0508-04	PUSH BUTTON,ORANGE;POWER
	K27-0557-04	BUTTON,RED;OUTPUT
	L07-1525-05	POWER TRANSFORMER
	N00-0718-05	SCREW,SEMS PAN HD M3X6
	N00-0720-05	SCREW,SEMS PAN HD M4X10
	N00-0757-05	SCREW,SEMS BINDING TAPTITE 3X6
	N00-0789-05	SCREW,SEMS PAN HD M3X10
	N00-0797-08	SCREW,SEMS TAPTITE 3X10
	N14-0004-04	FLAT WASHER M3
	N32-3006-41	SCREW,FLAT HD M3X6
	N40-3006-41	SCREW,BINDING TAPTITE 3X6
	N50-3010-41	SCREW,BINDING TAPTITE 3X10
	N88-3012-41	SCREW,BINDING TAPTITE 3X12
	S40-2533-08	PUSH SWITCH;POWER
	W02-2275-08	ENT. CONTROL UNIT
	W02-2279-08	AMP UNIT
	W02-2303-08	P.P.M. UNIT
VR01	R28-3503-08	VOLUME 10K
VR02	R29-1508-08	VOLUME 1K
VR03	R29-3504-08	VOLUME 10K

PA36-1.2A AMP UNIT
W02-2279-08

REF.NO	PARTS NO	NAME & DESCRIPTION
	E18-0162-08	SENSING TERMINAL
	E21-0674-05	EXTERNAL OUTPUT TERMINAL
	E40-7141-08	PIN CONNECTOR 2P(LINE VOLT ACE)
	E40-7142-08	PIN CONNECTOR 3P(LINE VOLT ACE)
	E40-7171-08	PIN CONNECTOR 2P
	J10-0518-08	FUSE CLIP;FOR 6X30MM
	J73-0250-08	PCB (UNMOUNTED)
	R92-0159-05	JUMPING RES. ZERO OHM(1 OHM)
	R92-1061-05	JUMPING RES. ZERO OHM (5MM)
C1	C90-3023-08	CAP. ELECTRO 470 105°C 35V
C2	C09BA1H223K	CAP. MYLAR 2200P ±1% 50V
C3	C91-2588-08	CAP. CERAZIC 0.1 0.2P 50V
C4	C09BN1H472K	CAP. MYLAR 4700P ±1% 50V
C5	C09BB1H103K	CAP. MYLAR 0.01 ±1% 50V
C6	NO USE	
C7	C90-3020-08	CAP. ELECTRO 100 105°C 25V
C8	C7GBAN2E822K	CAP. POLYESTER 0.22P ±1% 250V
C9	NO USE	
C10	C90-3025-08	CAP. ELECTRO 1000 105°C 63V
C11	C7GBAN1J223K	CAP. POLYESTER 0.22P ±1% 63V
C12	C90-3033-08	CAP. ELECTRO 220 105°C 25V
C13	C90-3033-08	CAP. ELECTRO 220 105°C 25V
C14	C7GBAN1J104K	CAP. POLYESTER 0.1 ±1% 63V
C15	C7GBAN1J104K	CAP. POLYESTER 0.1 ±1% 63V
C16	NO USE	
C17	C90-3034-08	CAP. ELECTRO 100 105°C 16V
C18	C90-3034-08	CAP. ELECTRO 100 105°C 16V
C19	C90-3022-08	CAP. ELECTRO 4.7 105°C 50V
C20	C7GBAP1J104K	CAP. POLYESTER 0.1 ±1% 62V
C21	NO USE	
C22	C91-2589-08	CAP. CERAMIC 0.1 0.2P 50V
C25	C90-3174-08	CAP. ELECTRO 10 1P 50V
C27	NO USE	
C28	C90-3020-08	CAP. ELECTRO 100 105°C 25V
C29	C91-2559-08	CAP. CERAMIC 0.1 0.25P 50V
C30	NO USE	
C31	C90-3046-08	CAP. ELECTRO 100 105°C 50V
C32	C7GBAN1J105K	CAP. POLYESTER 1P ±1% 63V
CN1	E40-7184-08	PIN CONNECTOR 5P
CN2	E40-7327-08	PIN CONNECTOR 12P
CN3	E40-7326-08	PIN CONNECTOR 15P
CN4	E40-7126-08	PIN CONNECTOR 2P
CN5	E40-7210-08	PIN CONNECTOR 3P
CN6	NO USE	
CN7	E40-7329-08	PIN CONNECTOR 4P
CN11	E40-7332-08	PIN CONNECTOR 4P
CN12	E40-7333-08	PIN CONNECTOR 2P
CN13	E40-7333-08	PIN CONNECTOR 2P
CN14	E40-7333-08	PIN CONNECTOR 2P
CN20	E40-3240-05	PIN CONNECTOR 5P
CN27	E40-7333-08	PIN CONNECTOR 2P
CN28	E40-7333-08	PIN CONNECTOR 2P
C01	C90-3018-08	CAP. ELECTRO 1 105°C 50V
C01	C91-1323-08	CAP. CERAMIC 0.1 20% 250V
C02	NO USE	
C03	C90-3041-08	CAP. ELECTRO 2.2 105°C 50V
D1	1S1842	DIODE,STACK
D2	ERA15-01	DIODE
D3	1SS270A	DIODE
D4	1SS270A	DIODE
D5	1SS270A	DIODE
D6	1SS270A	DIODE
D7	1SS270A	DIODE
D8	NO USE	
D9	D3SB60	DIODE,STACK
D10	ERA15-01	DIODE
D11	1S1842	DIODE,STACK
D14	1SS270A	DIODE
D15	1SS270A	DIODE
D16	1SS270A	DIODE
D24	1SS270A	DIODE
D25	1SS270A	DIODE
D26	NO USE	
D27	ERA15-01	DIODE
D28	ERA15-01	DIODE
D29	ERA15-01	DIODE
D30	ERA15-01	DIODE
D31	ERA15-01	DIODE
D32	ERA15-01	DIODE
D33	ERA15-01	DIODE
D34	1SS270A	DIODE
D37	ERA15-01	DIODE

PARTS LIST

REF.NO	PARTS NO	NAME & DESCRIPTION
D36	RK63	DIODE
D37	ERA15-01	DIODE
D38	1SS270A	DIODE
D39	ERA15-01	DIODE
D01	30S1	DIODE
IC1	UPC151C	IC,OP AMP
IC2	UPC151C	IC,OP AMP
IC3	UPC1093J	IC,VARIABLE SHUNT REGULATOR
IC4	UPC78M05H	IC,3-TERMINAL REGULATOR
IC5	UPC7D05H	IC,3-TERMINAL REGULATOR
IC6	UPC1093J	IC,VARIABLE SHUNT REGULATOR
IC7	LM607CN	IC,OP AMP
IC8	UPC1093J	IC,VARIABLE SHUNT REGULATOR
*IC9	RH-378L12A	IC,TERMINAL FIXED VOLTAGE REG.
Q1	2SC1815(GR)	TR. SI. NPN
Q2	2SC1815(GR)	TR. SI. NPN
Q3	2SC1815(GR)	TR. SI. NPN
Q4	2SC1815(GR)	TR. SI. NPN
Q5	2SC1815(GR)	TR. SI. NPN
Q6	2SB1148(O)	TR. SI. NPN
Q7	2SC2238(Y)	TR. SI. NPN
Q8	2SC3421(Y)	TR. SI. NPN
Q9	2SC1815(GR)	TR. SI. NPN
Q10	2SC1815(GR)	TR. SI. NPN
Q11	2SB1148(O)	TR. SI. NPN
Q12	NO USE	
Q13	2SC1815(GR)	TR. SI. NPN
Q17	DTA143EF	TR. DIGITAL
Q11A	2SB1148(O)	TR. SI. NPN
Q11B	2SB1148(O)	TR. SI. NPN
Q11C	2SB1148(O)	TR. SI. NPN
R1	RD14BB2C122J	RES. CARBON 1.2K 5% 1/6W
R2	RD14BB2C133J	RES. CARBON 12K 5% 1/6W
R3	RD14BB2C393J	RES. CARBON 39K 5% 1/6W
R4	RD14BB2C510J	RES. CARBON 51 5% 1/6W
R5	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R6	RD14BB2C273J	RES. CARBON 27K 5% 1/6W
R7	RN14BK2C5101F	RES. METAL FILM 5.1K 1% 1/6W
R8	RD14BB2C202J	RES. CARBON 2K 5% 1/6W
R9	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R10	RD14BB2C121J	RES. CARBON 120 5% 1/6W
R11	RD14BB2C512J	RES. CARBON 51K 5% 1/6W
R12	NO USE	
R13	RD14BB2C202J	RES. CARBON 2K 5% 1/6W
R14	RD14BB2C152J	RES. CARBON 1.5K 5% 1/6W
R15	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R16	RD14BB2C512J	RES. CARBON 5.1K 5% 1/6W
R17	NO USE	
R18	RD14BB2C513J	RES. CARBON 51K 5% 1/6W
R19	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R20	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R21	RN14BK2C3903F	RES. METAL FILM 390K 1% 1/6W
R22	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R23	RN14BK2C9101F	RES. METAL FILM 9.1K 1% 1/6W
R24	RN14BK2C3001F	RES. METAL FILM 3K 1% 1/6W
R27	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R28	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R29	RS14CB3P152J	RES. METAL FILM 1.5K 5% 2W
R30	RS14GB3AR33J	RES. METAL FILM 0.33 5% 1W
R31	NO USE	
R32	RS14GB3AR33J	RES. METAL FILM 0.33 5% 1W
R33	NO USE	
R34	RD14BB2C122J	RES. CARBON 1.2K 5% 1/6W
R35	RD14BB2C123J	RES. CARBON 12K 5% 1/6W
R36	RD14BB2C392J	RES. CARBON 3K 5% 1/6W
R37	RD14BB2C510J	RES. CARBON 51 5% 1/6W
R38	RD14BB2C123J	RES. CARBON 12K 5% 1/6W
R39	RD14BB2C273J	RES. CARBON 27K 5% 1/6W
R43	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R44	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R45	RD14BB2B202J	RES. CARBON 2K 5% 1/2W
R51	RN14BK2C2401F	RES. METAL FILM 2.4K 1% 1/6W
R52	RN14BK2C3001F	RES. METAL FILM 3K 1% 1/6W
R53	RD14BB2C911J	RES. CARBON 910 5% 1/6W
R54	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R55	RN14BK2C5102F	RES. METAL FILM 51K 1% 1/6W
R56	RN14BK2C5102F	RES. METAL FILM 51K 1% 1/6W
R57	NO USE	
R58	RN14BK2C5102F	RES. METAL FILM 51K 1% 1/6W
R59	RN14BK2C5102F	RES. METAL FILM 51K 1% 1/6W
R60	RD14BB2C511J	RES. CARBON 510 5% 1/6W
R61	RN14BK2C9101F	RES. METAL FILM 9.1K 1% 1/6W
R62	RD14BB2C362J	RES. CARBON 3K 5% 1/6W
R63	NO USE	
R64	RN14BK2C7500F	RES. METAL FILM 750 1% 1/6W
R67	RS14GB3DK10J	RES. METAL FILM 0.1 5% 2W

REF.NO	PARTS NO	NAME & DESCRIPTION
R68	RD14BB2C273J	RES. CARBON 27K 5% 1/6W
R74	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R75	RD14DB2B202J	RES. CARBON 2K 5% 1/2W
R85	RD14BB2E101J	RES. CARBON 100 5% 1/2W
R86	RS14GB3A102J	RES. METAL FILM 1K 5% 1W
R87	RS14GB3A102J	RES. METAL FILM 1K 5% 1W
R88	RD14BB2C104J	RES. CARBON 100K 5% 1/6W
R91	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R94	RD14BB2C100J	RES. CARBON 10 5% 1/6W
R95	NO USE	
R96	RD14BB2C912J	RES. CARBON 9.1K 5% 1/6W
R32A	RS14GB3AR33J	RES. METAL FILM 0.33 5% 1W
R32B	RS14GB3AR33J	RES. METAL FILM 0.33 5% 1W
R32C	RS14GB3AR33J	RES. METAL FILM 0.33 5% 1W
R01	RN14BK2C1003F	RES. METAL FILM 100K 1% 1/6W
RTH1	100D-5	THERMISTER
RY1	S76-0604-08	RELAY
RY2	S76-0604-08	RELAY
RY3	S76-0604-08	RELAY
RY4	S76-0630-08	RELAY
SW2	S31-1512-08	MASTER/SLAVE SWITCH
VR1	R12-1564-08	RES. SEMI FIXED 1KB
VR2	R12-5567-08	RES. SEMI FIXED 100KB
VR3	NO USE	
VR4	R12-3567-08	RES. SEMI FIXED 10KB
VR5	R12-3567-08	RES. SEMI FIXED 10KB

PARTS LIST

REF.NO	PARTS NO	NAME & DESCRIPTION
D34	1SS270A	DIODE
D37	EA415-01	DIODE
D38	1SS270A	DIODE
D39	EA415-01	DIODE
D01	EA415-01	DIODE
IC1	UPC1S1C	IC,OP AMP
IC2	UPC1S1C	IC,OP AMP
IC3	UPC1093J	IC,VARIABLE SHUNT REGULATOR
IC4	UPC78M05H	IC,3-TERMINAL REGULATOR
IC5	UPC79M05H	IC,3-TERMINAL REGULATOR
IC6	UPC1093J	IC,VARIABLE SHUNT REGULATOR
IC7	LM307CN	IC,OP AMP
IC8	UPC1093J	IC,VARIABLE SHUNT REGULATOR
IC9	MAI78L12A	IC,TERMINAL FIXED VOLTAGE REG.
Q1	2SC1815(GR)	TR. SI, NPN
Q2	2SC1815(GR)	TR. SI, NPN
Q3	2SC1815(GR)	TR. SI, NPN
Q4	2SC1815(GR)	TR. SI, NPN
Q5	2SC1815(GR)	TR. SI, NPN
Q6	2SB1148(O)	TR. SI, NPN
Q7	2SC2238(Y)	TR. SI, NPN
Q8	2SC4321(Y)	TR. SI, NPN
Q9	2SC1815(GR)	TR. SI, NPN
Q10	2SC1815(GR)	TR. SI, NPN
Q11	2SB1148(O)	TR. SI, NPN
Q12	NO USE	
Q13	2SC1815(GR)	TR. SI, NPN
Q17	DTA143EF	TR. DIGITAL
Q11A	2SB1148(O)	TR. SI, NPN
Q11B	2SB1148(O)	TR. SI, NPN
Q11C	2SB1148(O)	TR. SI, NPN
R1	RD14BB2C122J	RES. CARBON 1.2K 5% 1/6W
R2	RD14BB2C123J	RES. CARBON 12K 5% 1/6W
R3	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R4	RD14BB2C510J	RES. CARBON 51 5% 1/6W
R5	RD14BB2C303J	RES. CARBON 30K 5% 1/6W
R6	RD14BB2C273J	RES. CARBON 27K 5% 1/6W
R7	RN14BB2C1001F	RES. METAL FILM 1K 1% 1/6W
R8	RD14BB2C202J	RES. CARBON 2K 5% 1/6W
R9	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R10	RD14BB2C123J	RES. CARBON 12K 5% 1/6W
R11	RD14BB2C513J	RES. CARBON 51K 5% 1/6W
R12	NO USE	
R13	RD14BB2C202J	RES. CARBON 2K 5% 1/6W
R14	RD14BB2C152J	RES. CARBON 1.5K 5% 1/6W
R15	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R16	RD14BB2C512J	RES. CARBON 5.1K 5% 1/6W
R17	NO USE	
R18	RD14BB2C513J	RES. CARBON 51K 5% 1/6W
R19	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R20	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R21	RN14BK2E3303F	RES. METAL FILM 330K 1% 1/6W
R22	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R23	RN14BK2E9101F	RES. METAL FILM 9.1K 1% 1/6W
R24	RN14BK2E3001F	RES. METAL FILM 3K 1% 1/6W
R27	RD14BB2C103J	RES. CARBON 1K 5% 1/6W
R28	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R29	RS14GB3D123J	RES. METAL FILM 12K 5% 2W
R30	RS14GB3A1R5J	RES. METAL FILM 1.5 5% 1W
R31	NO USE	
R32	RS14GB3A1R5J	RES. METAL FILM 1.5 5% 1W
R33	NO USE	
R34	RD14BB2C122J	RES. CARBON 1.2K 5% 1/6W
R35	RD14BB2C123J	RES. CARBON 12K 5% 1/6W
R36	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R37	RD14BB2C510J	RES. CARBON 51 5% 1/6W
R38	RD14BB2C753J	RES. CARBON 75K 5% 1/6W
R39	RD14BB2C273J	RES. CARBON 27K 5% 1/6W
R43	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R44	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R45	RD14BB2B303J	RES. CARBON 30K 5% 1/2W
R51	RN14BK2C2401F	RES. METAL FILM 2.4K 1% 1/6W
R52	RN14BK2C3901F	RES. METAL FILM 3K 1% 1/6W
R53	RD14BB2C911J	RES. CARBON 910 5% 1/6W
R54	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R55	RN14BK2C5102F	RES. METAL FILM 51K 1% 1/6W
R56	RN14BK2C9102F	RES. METAL FILM 91K 1% 1/6W
R57	NO USE	
R58	RN14BK2C5102F	RES. METAL FILM 51K 1% 1/6W
R59	RN14BK2C5102F	RES. METAL FILM 51K 1% 1/6W
R60	RD14BB2C911J	RES. CARBON 910 5% 1/6W
R61	RN14BK2C9191F	RES. METAL FILM 9.1K 1% 1/6W
R62	RD14BB2C302J	RES. CARBON 3K 5% 1/6W
R63	NO USE	
R64	RN14BK2C8201F	RES. METAL FILM 8.2K 1% 1/6W
R67	RS14GB3B822J	RES. METAL FILM 8.2K 5% 2W
R68	RD14BB2C333J	RES. CARBON 33K 5% 1/6W
R74	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R75	RD14BB2B303J	RES. CARBON 30K 5% 1/2W
R85	RD14BB2B101J	RES. CARBON 100 5% 1/2W
R86	RS14GB3A102J	RES. METAL FILM 1K 5% 1W
R87	RS14GB3A102J	RES. METAL FILM 1K 5% 1W
R88	RD14BB2C104J	RES. CARBON 100K 5% 1/6W
R91	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R94	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R95	NO USE	
R96	RD14BB2C912J	RES. CARBON 9.1K 5% 1/6W
R32A	RS14GB3A1R5J	RES. METAL FILM 1.5 5% 1W
R32B	RS14GB3A1R5J	RES. METAL FILM 1.5 5% 1W
R32C	RS14GB3A1R5J	RES. METAL FILM 1.5 5% 1W
R01	RN14BE2C1003F	RES. METAL FILM 100K 1% 1/6W
RTH1	1900-5	THERMISTER
RY1	S7K-0604-06	RELAY
RY2	S7K-0604-06	RELAY
RY3	S7K-0604-06	RELAY
RY4	S7K-0630-06	RELAY
SW2	S31-1512-08	MASTER/SLAVE SWITCH
VR1	R12-1564-08	RES. SEMI FIXED 1KB
VR2	R12-5547-08	RES. SEMI FIXED 100KB
VR3	NO USE	
VR4	R12-3567-08	RES. SEMI FIXED 10KB
VR5	R12-3567-08	RES. SEMI FIXED 10KB

PARTS LIST

PA70-1A EXT. CONTROL UNIT
W02-2275-08

REF.NO	PARTS NO	NAME & DESCRIPTION
	E2D-0544-08	EXTERNAL CONTROL TERMINAL
	J73-0261-08	PCB (ORDERWYTED)
	R92-0150-05	JUMPING RES. ZERO OHM(10MM)
C1	CK45F1H472K	CAP. CERAMIC 4700P 10% 50V
CN10	540-7328-08	PIN CONNECTOR 15P
CN20	540-7333-08	PIN CONNECTOR 2P
D13	1SS270A	DIODE
Q12	2SC1815(GR)	TR. SI, NPN
R41	RD14BB2E512J	RES. CARBON 5.1K 5% 1/4W
R47	RD14BB2E622J	RES. CARBON 6.2K 5% 1/4W
R77	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R78	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
SW3	S62-0160-08	K/S SWITCH
SW4	S62-0160-08	K/S SWITCH
SW5	S62-0160-08	K/S SWITCH
SW6	S62-0160-08	K/S SWITCH
SW7	S62-0160-08	K/S SWITCH

PA18-1.2A/3A PA36-1.2A/3A PA70-1A
DIGITAL PANEL METER UNIT
W02-2303-08

REF.NO	PARTS NO	NAME & DESCRIPTION
	X3H-0546-08	WIRE ASS'Y:12AP JUMPER
	J41-0532-08	PCB SUPPORT
	B30-4501-08	SCREW,PAN HD TAPPING 3.5X6
C1	CE04EW1A101M	CAP. ELECTRO 100 20% 10V
C2	CE04EW1E4R7K	CAP. ELECTRO 4.7 20% 25V
C3	CK45F1H104Z	CAP. CERAMIC 0.1 20% 50V
C4	CK45F1H104Z	CAP. CERAMIC 0.1 20% 50V
C5	CK45F1H104Z	CAP. CERAMIC 0.1 20% 50V
C6	CQ02E1H104K	CAP. MYLAR 0.1 10% 50V
C7	CQ02E1H104K	CAP. MYLAR 0.1 10% 50V
C8	CQ02E1H104K	CAP. MYLAR 0.1 10% 50V
C9	CQ02E1H104K	CAP. MYLAR 0.1 10% 50V
C10	CQ02E1H104K	CAP. MYLAR 0.1 10% 50V
C11	CQ02E1H104K	CAP. MYLAR 0.1 10% 50V
C12	CK45F1H104Z	CAP. CERAMIC 0.1 20% 50V
C13	CE04EW1E4R7K	CAP. ELECTRO 4.7 20% 25V
C14	CE04EW1E4R7K	CAP. ELECTRO 4.7 20% 25V
C15	CE04EW1E4R7M	CAP. ELECTRO 4.7 20% 25V
C16	CK45F1H104Z	CAP. CERAMIC 0.1 20% 50V
C17	CK45F1H104Z	CAP. CERAMIC 0.1 20% 50V
C18	CK45F1H104Z	CAP. CERAMIC 0.1 20% 50V
C19	CK45B1H471K	CAP. CERAMIC 470P 10% 50V
C120	CK45B1H471K	CAP. CERAMIC 470P 10% 50V
C121	CK45B1H471K	CAP. CERAMIC 470P 10% 50V
C122	CK45B1H471K	CAP. CERAMIC 470P 10% 50V
CN1	540-7315-08	PIN CONNECTOR 12P
D1	1S1588	DIODE
IC1	MC14433P	IC,3-1/2 DIGIT A/D CONVERTER
IC2	MC14433P	IC,3-1/2 DIGIT A/D CONVERTER
IC3	TC4066BP	IC,QUAD BILATERAL SWITCH
IC4	TC74HC4511AP	IC,BCD 7 LATCH/DECODER/DRIVER
IC5	TC74HC4511AP	IC,BCD-7 LATCH/DECODER/DRIVER
IC6	MC1413P	IC,PERIPHERAL DRIVER ARRAY
IC7	TC74HC74AP	IC,DUAL D-FLIP FLOP
IC8	TC74HC10AP	IC,TRIPLE 3-INPUT NAND GATE
IC9	TC74HC14AP	IC,HEX SCHMITT INVERTER
JP1	R92-0150-05	JUMPING RES. ZERO OHM(10MM)
L1	B30-0972-05	LED,RED
L2	B30-0972-05	LED,RED
L3	B30-0973-05	LED,GREEN
LE1	B30-0974-05	LED,7-SEGMENTS
LE2	B30-0974-05	LED,7-SEGMENTS
LE3	B30-0974-05	LED,7-SEGMENTS
LE4	B30-0974-05	LED,7-SEGMENTS
LE5	B30-0974-05	LED,7-SEGMENTS
LE6	B30-0974-05	LED,7-SEGMENTS
LE7	B30-0974-05	LED,7-SEGMENTS
PC1	PC817	IC,PHOTO COUPLER
R1	RN14BK2E1300F	RES. METAL FILM 130K 1% 1/4W
R2	RN14BK2E7501F	RES. METAL FILM 7.5K 1% 1/4W
R3	RN14BK2E4702F	RES. METAL FILM 47K 1% 1/4W
R4	RN14BK2E4701F	RES. METAL FILM 4.7K 1% 1/4W
R5	RN14BK2E2001F	RES. METAL FILM 2K 1% 1/4W
R6	RN14BK2E1001F	RES. METAL FILM 1K 1% 1/4W
R7	RN14BK2E3001F	RES. METAL FILM 3K 1% 1/4W
R8	RN14BK2E2E01F	RES. METAL FILM 2K 1% 1/4W
R11	RD14BB2E103J	RES. CARBON 10K 5% 1/4W
R12	RD14BB2E103J	RES. CARBON 10K 5% 1/4W
R13	RD14BB2E512J	RES. CARBON 5.1K 5% 1/4W
R14	RN14BK2E3003F	RES. METAL FILM 300K 1% 1/4W
R15	RN14BK2E5103F	RES. METAL FILM 510K 1% 1/4W
R16	RN14BK2E3003F	RES. METAL FILM 300K 1% 1/4W
R17	RN14BK2E5103F	RES. METAL FILM 510K 1% 1/4W
R20	R92-1061-05	JUMPING RES. ZERO OHM (5MM)
R21	RD14BB2C821J	RES. CARBON 820 5% 1/6W
R22	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R23	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R24	RD14BB2C1022J	RES. CARBON 10K 5% 1/6W
R25	RD14BB2C224J	RES. CARBON 220K 5% 1/6W
R26	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R27	RD14BB2E564J	RES. CARBON 560K 5% 1/4W
R28	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R29	RD14BB2C103J	RES. CARBON 1K 5% 1/6W
R30	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R31	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R129	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R130	RD14BB2C103J	RES. CARBON 10K 5% 1/6W

PARTS LIST

REF.NO	PARTS NO	NAME & DESCRIPTION			
R131	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R132	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R18A	RD14BB2E102J	RES. CARBON	1K	5%	1/4W
R18B	RD14BB2E122J	RES. CARBON	1.2K	5%	1/4W
R19A	RD14BB2E102J	RES. CARBON	1K	5%	1/4W
R19B	RD14BB2E122J	RES. CARBON	1.2K	5%	1/4W
RA1	RN0-1129-08	RES. NETWORK	4X330		
RA2	RN0-1129-08	RES. NETWORK	4X330		
RA3	RN0-1129-08	RES. NETWORK	4X330		
RA4	RN0-1129-08	RES. NETWORK	4X330		
SW1	S74-0601-08	TACT SWITCH			
TR1	DTA114EFX	TR. DIGITAL			
VR1	R12-1566-08	RES. SEMI FIXED 1K			
VR2	R12-1566-08	RES. SEMI FIXED 1K			
VR3	R12-1566-08	RES. SEMI FIXED 1K			
ZD1	TL431CLPB	IC,3-TERMINAL SHUNT REGULATOR			

PA18-6A DIGITAL PANEL METER UNIT

W02-2304-08

REF.NO	PARTS NO	NAME & DESCRIPTION			
	33A-0546-08	WIRE ASS'Y:24P JUMPER			
	J61-0532-05	PCB SUPPORT			
	N09-0501-08	SCREW,PAN HD TAPPING 3.5X6			
C1	CE04EW1A101K	CAP. ELECTRO	100	20%	10V
C2	CE04EW1E4R7M	CAP. ELECTRO	4.7	20%	25V
C3	CK45F1H104Z	CAP. CERAMIC	0.1	20%	50V
C4	CK45F1H104Z	CAP. CERAMIC	0.1	20%	50V
C5	CK45F1H104Z	CAP. CERAMIC	0.1	20%	50V
C6	CQ92M1H104K	CAP. MYLAR	0.1	10%	50V
C7	CQ92M1H104K	CAP. MYLAR	0.1	10%	50V
C8	CQ92M1H104K	CAP. MYLAR	0.1	10%	50V
C9	CQ92M1H104K	CAP. MYLAR	0.1	10%	50V
C10	CQ92M1H104K	CAP. MYLAR	0.1	10%	50V
C11	CQ92M1H104K	CAP. MYLAR	0.1	10%	50V
C12	CK45F1H104Z	CAP. CERAMIC	0.1	20%	50V
C13	CE04W1E4R7M	CAP. ELECTRO	4.7	20%	25V
C14	CE04W1E4R7M	CAP. ELECTRO	4.7	20%	25V
C15	CE04Z1E4R7M	CAP. ELECTRO	4.7	20%	25V
C16	CK45F1E104Z	CAP. CERAMIC	0.1	20%	50V
C17	CK45F1E104Z	CAP. CERAMIC	0.1	20%	50V
C18	CK45F1E104Z	CAP. CERAMIC	0.1	20%	50V
C19	CK45B1E471K	CAP. CERAMIC	470P	10%	50V
C120	CK45B1H471K	CAP. CERAMIC	470P	10%	50V
C121	CK45B1H471K	CAP. CERAMIC	470P	10%	50V
C122	CK45B1H471K	CAP. CERAMIC	470P	10%	50V
CN1	E40-7315-08	PIN CONNECTOR	12P		
D1	1SS88	DIODE			
IC1	MC14433P	IC,3-1/2 DIGIT A/D CONVERTER			
IC2	MC14433P	IC,3-1/2 DIGIT A/D CONVERTER			
IC3	TC4066BF	IC,QUAD BILATERAL SWITCH			
IC4	TC74HC4511AP	IC,BCD 7 LATCH/DECODER/DRIVER			
IC5	TC74HC4511AP	IC,BCD-7 LATCH/DECODER/DRIVER			
IC6	MC1413P	IC,PERIPHERAL DRIVER ARRAY			
IC7	TC74HC74AP	IC,DUAL D-FLIP FLOP			
IC8	TC74HC10AP	IC,TRIPLE 3-INPUT NAND GATE			
IC9	TC74HC14AP	IC,HEX SCHMITT INVERTER			
L1	B30-0972-05	LED,RED			
L2	B30-0972-05	LED,RED			
L3	B30-0973-05	LED,GREEN			
LE1	B30-0974-05	LED,7-SEGMENTS			
LE2	B30-0974-05	LED,7-SEGMENTS			
LE3	B30-0974-05	LED,7-SEGMENTS			
LE4	B30-0974-05	LED,7-SEGMENTS			
LE5	B30-0974-05	LED,7-SEGMENTS			
LE6	B30-0974-05	LED,7-SEGMENTS			
LE7	B30-0974-05	LED,7-SEGMENTS			
PC1	PC817	IC,PHOTO COUPLER			
R1	RN14BB2E1303F	RES. METAL FILM	130K	1%	1/4W
R2	RN14BB2E7501F	RES. METAL FILM	7.5K	1%	1/4W
R3	RN14BB2E4702F	RES. METAL FILM	47K	1%	1/4W
R4	RN14BB2E4701F	RES. METAL FILM	4.7K	1%	1/4W
R5	RN14BB2E2001F	RES. METAL FILM	2K	1%	1/4W
R6	RN14BB2E1001F	RES. METAL FILM	1K	1%	1/4W
R7	RN14BB2E3001F	RES. METAL FILM	3K	1%	1/4W
R8	RN14BB2E2001F	RES. METAL FILM	2K	1%	1/4W
R9	RN14BB2E1002F	RES. METAL FILM	10K	1%	1/4W
R10	RN14BB2E2401F	RES. METAL FILM	2.4K	1%	1/4W
R11	RD14BB2E103J	RES. CARBON	10K	5%	1/4W
R12	RD14BB2E103J	RES. CARBON	10K	5%	1/4W
R13	RD14BB2E512J	RES. CARBON	5.1K	5%	1/4W
R14	RN14BB2E3003F	RES. METAL FILM	300K	1%	1/4W
R15	RN14BB2E5103F	RES. METAL FILM	510K	1%	1/4W
R16	RN14BB2E3003F	RES. METAL FILM	300K	1%	1/4W
R17	RN14BB2E5103F	RES. METAL FILM	510K	1%	1/4W
R20	RS2-1061-05	JUMPING RES.	ZERO OHM (5MM)		
R21	RD14BB2C821J	RES. CARBON	820	5%	1/6W
R22	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R23	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R24	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R25	RD14BB2C224J	RES. CARBON	220K	5%	1/6W
R26	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R27	RD14BB2E364J	RES. CARBON	360K	5%	1/4W
R28	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R29	RD14BB2C103J	RES. CARBON	1K	5%	1/6W
R30	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R31	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R129	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R130	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R131	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R132	RD14BB2C102J	RES. CARBON	1K	5%	1/6W

PARTS LIST

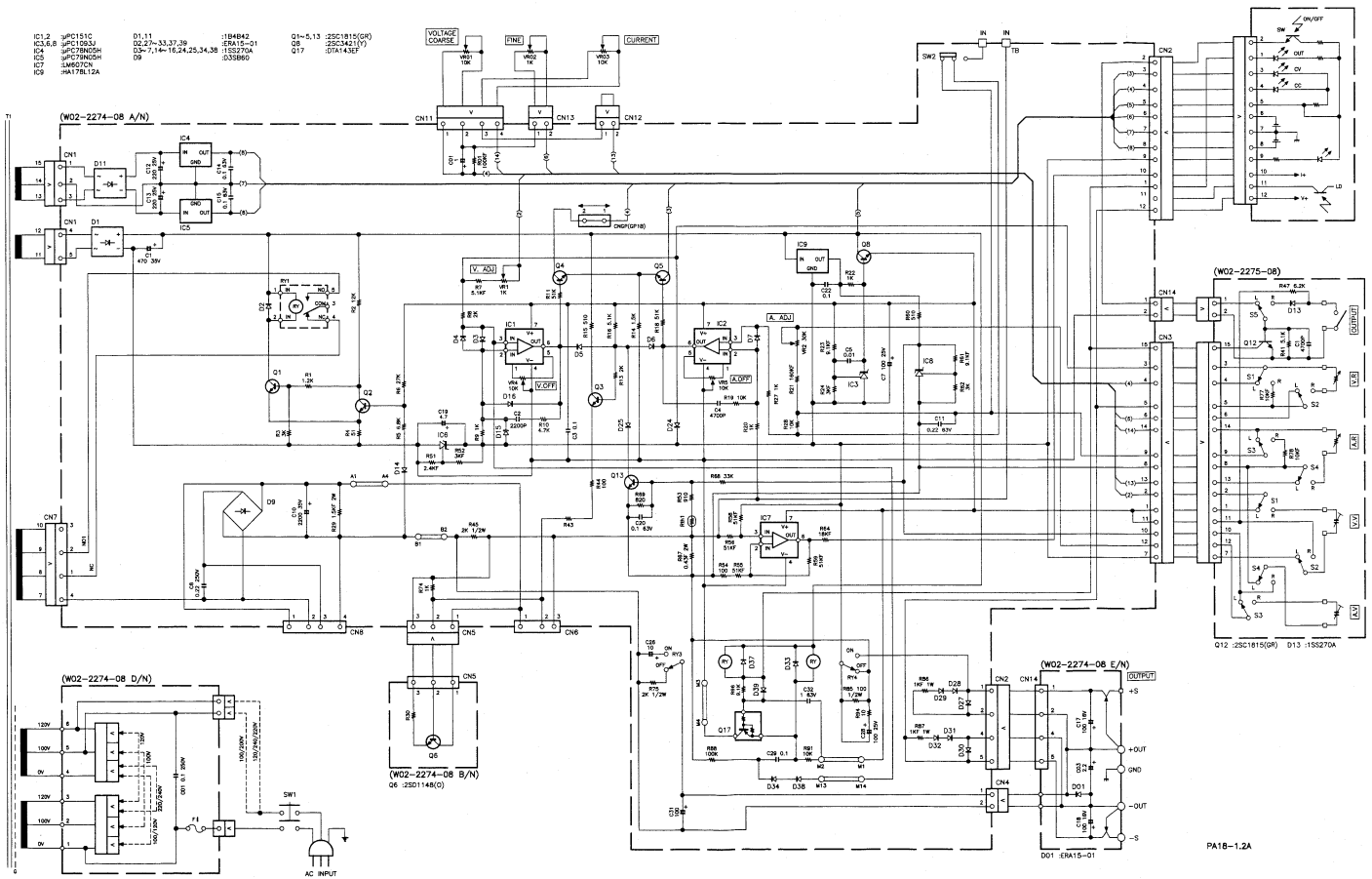
REF.NO	PARTS NO	NAME & DESCRIPTION			
R18A	RD14BB2E102J	RES. CARBON	1K	5%	1/4W
R18B	RD14BB2E122J	RES. CARBON	1.2K	5%	1/4W
R19A	RD14BB2E102J	RES. CARBON	1K	5%	1/4W
R19B	RD14BB2E122J	RES. CARBON	1.2K	5%	1/4W
RA1	RN0-1129-08	RES. NETWORK	4X330		
RA2	RN0-1129-08	RES. NETWORK	4X330		
RA3	RN0-1129-08	RES. NETWORK	4X330		
RA4	RN0-1129-08	RES. NETWORK	4X330		
SW1	S74-0601-08	TACT SWITCH			
TR1	DTA114EFX	TR. DIGITAL			
VR1	R12-1566-08	RES. SEMI FIXED 1K			
VR2	R12-1566-08	RES. SEMI FIXED 1K			
VR3	R12-1566-08	RES. SEMI FIXED 1K			
ZD1	TL431CLPB	IC,3-TERMINAL SHUNT REGULATOR			

OP-13A

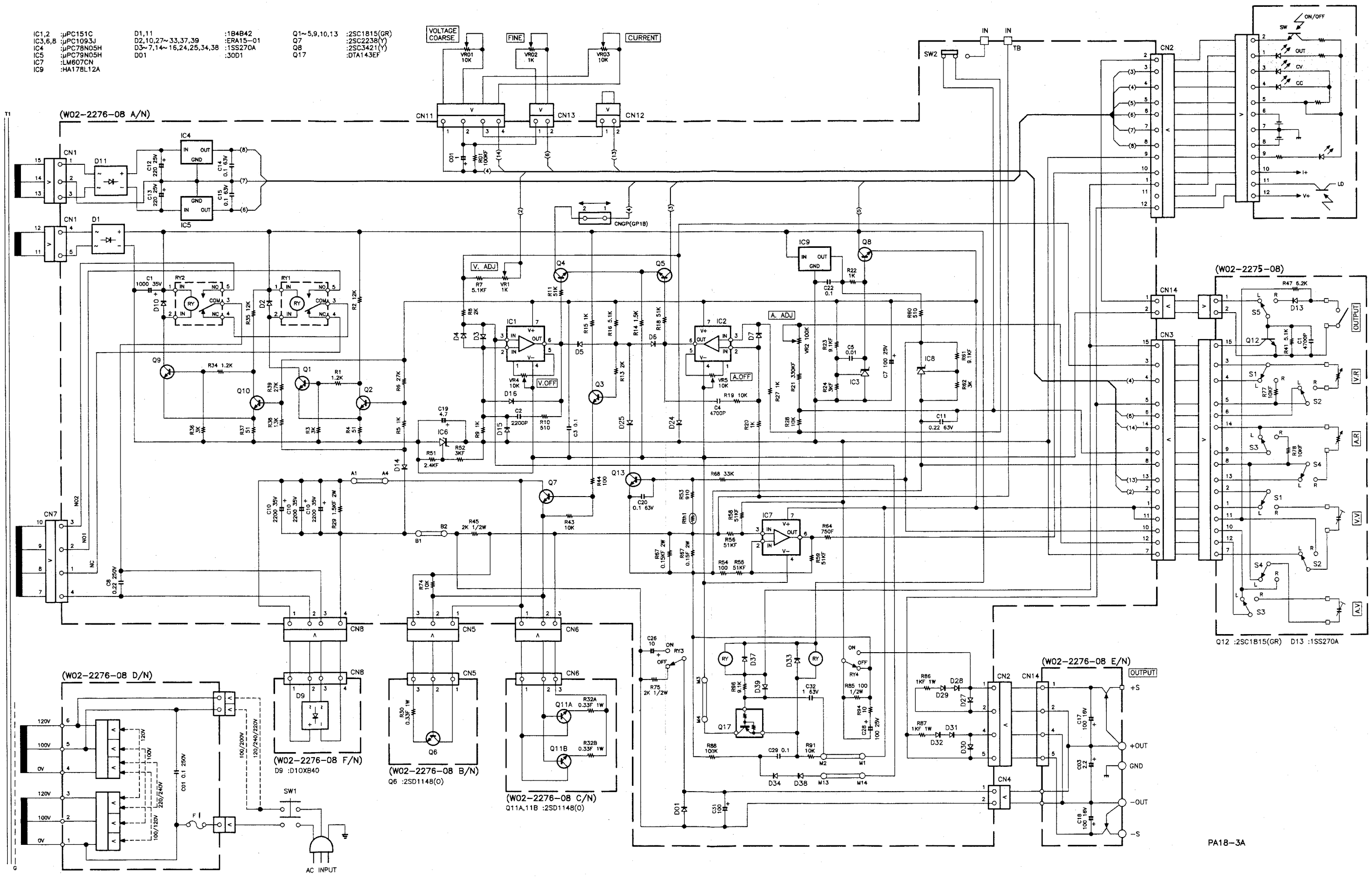
Y87-2880-00

REF.NO	PARTS NO	NAME & DESCRIPTION			
	B42-3918-08	LABEL,OP-13			
	B63-0157-00	INSTRUCTION MANUAL			
	E24-0544-05	EXTERNAL CONTROL TERMINAL			
	J73-3914-08	PCB (UNMOUNTED)			
	RS2-1061-05	JUMPING RES.	ZERO OHM (5MM)		
CN1	E40-7328-08	PIN CONNECTOR	15P		
CN2	E40-7333-08	PIN CONNECTOR	2P		
D1	1SS270A	DIODE			
D2	1SS270A	DIODE			
PC1	TLP521-3	IC,PHOTO COUPLER			
Q	2SC1815(GR)	TR. SI. NPN			
R1	RN14BB2C561J	RES. CARBON	560	5%	1/6W
R2	RD14BB2C512J	RES. CARBON	5.1K	5%	1/6W
R3	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R4	RD14BB2C303J	RES. CARBON	3K	5%	1/6W
R5	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R6	RD14BB2E103J	RES. CARBON	10K	5%	1/4W
SW1	S62-0168-08	R/S SWITCH			
SW2	S62-0168-08	R/S SWITCH			
SW3	S62-0170-08	M/L SWITCH			

SCHEMATIC DIAGRAM PA18-1.2A

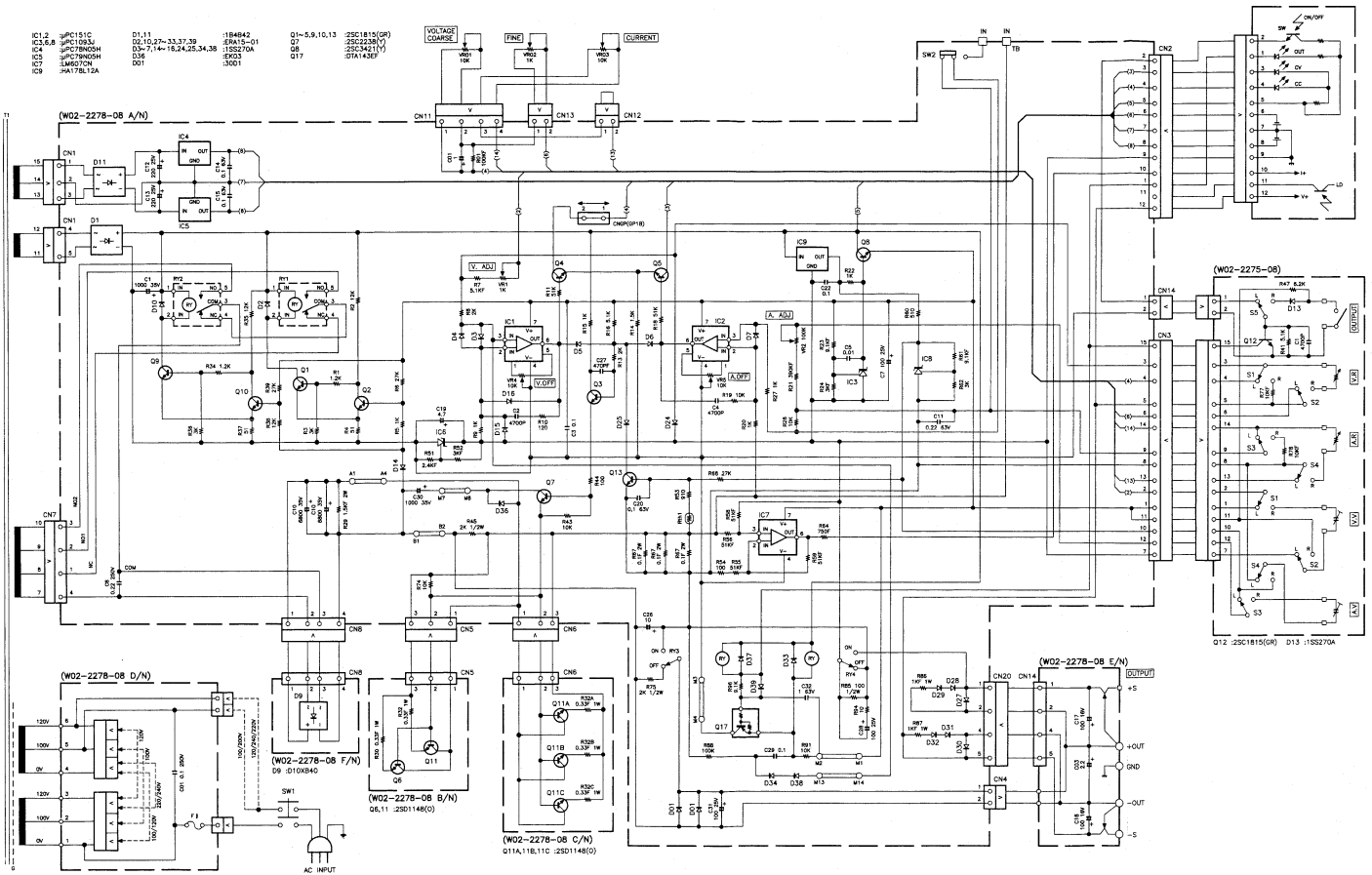


SCHEMATIC DIAGRAM PA18-3A

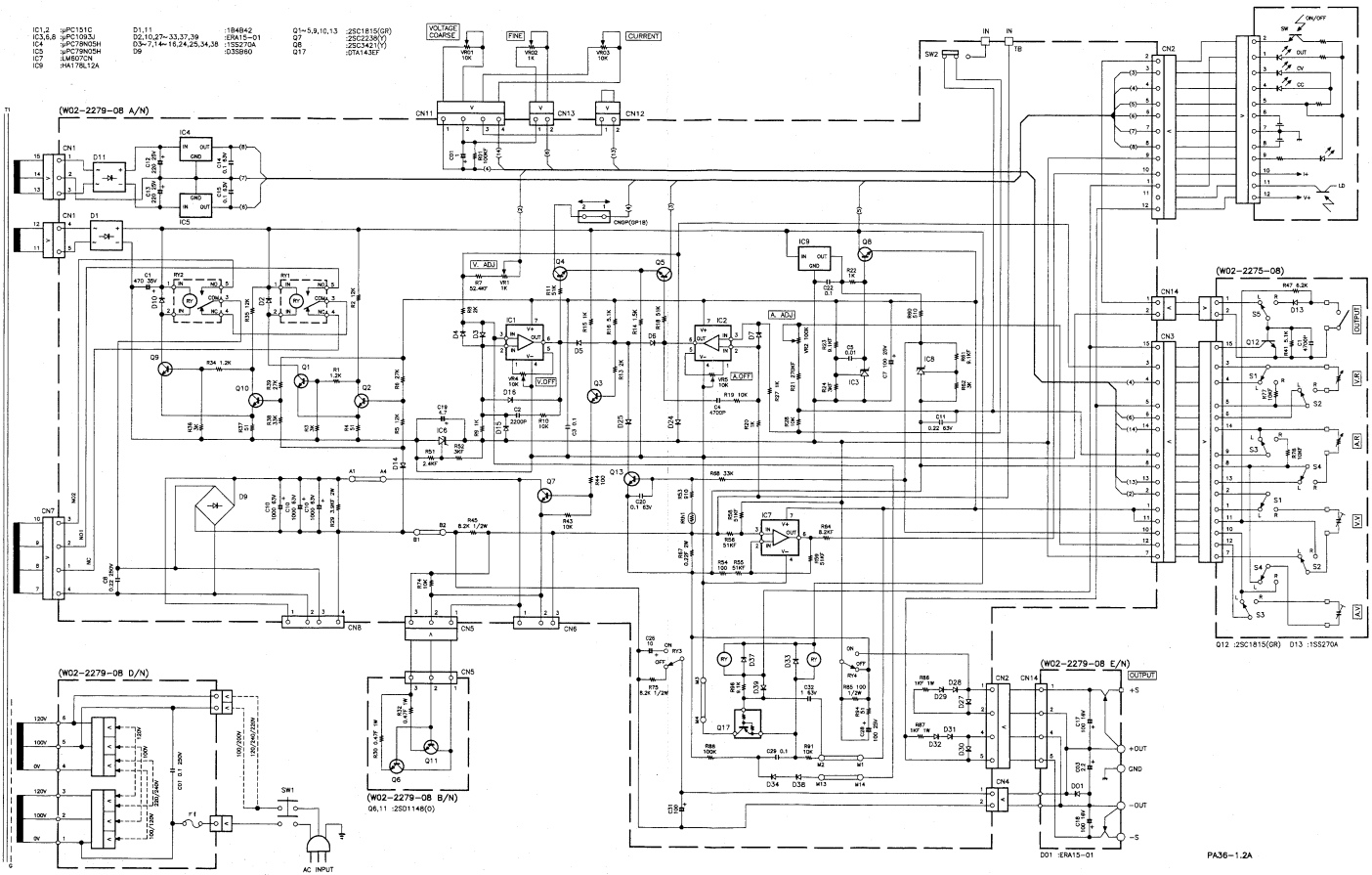


IC1,2 :µPC151C
IC3,6,8 :µPC1093J
IC4 :µPC78N05H
IC5 :µPC79N05H
IC7 :LM607CN
IC9 :HA178L12A
D1,11 :1B4B42
D2,10,27~33,37,39 :ERA15-01
D3~7,14~16,24,25,34,38 :1SS270A
D01 :30D1
Q1~5,9,10,13 :2SC1815(GR)
Q7 :2SC2238(Y)
Q8 :2SC3421(Y)
Q17 :DTA143EF
VOLTAGE COARSE
FINE
CURRENT
(W02-2276-08 A/N)
(W02-2275-08)
(W02-2276-08 D/N)
(W02-2276-08 F/N)
D9 :D10XB40
(W02-2276-08 B/N)
Q6 :2SD1148(O)
(W02-2276-08 C/N)
Q11A,11B :2SD1148(O)
(W02-2276-08 E/N)
OUTPUT
Q12 :2SC1815(GR) D13 :1SS270A
AC INPUT
PA18-3A

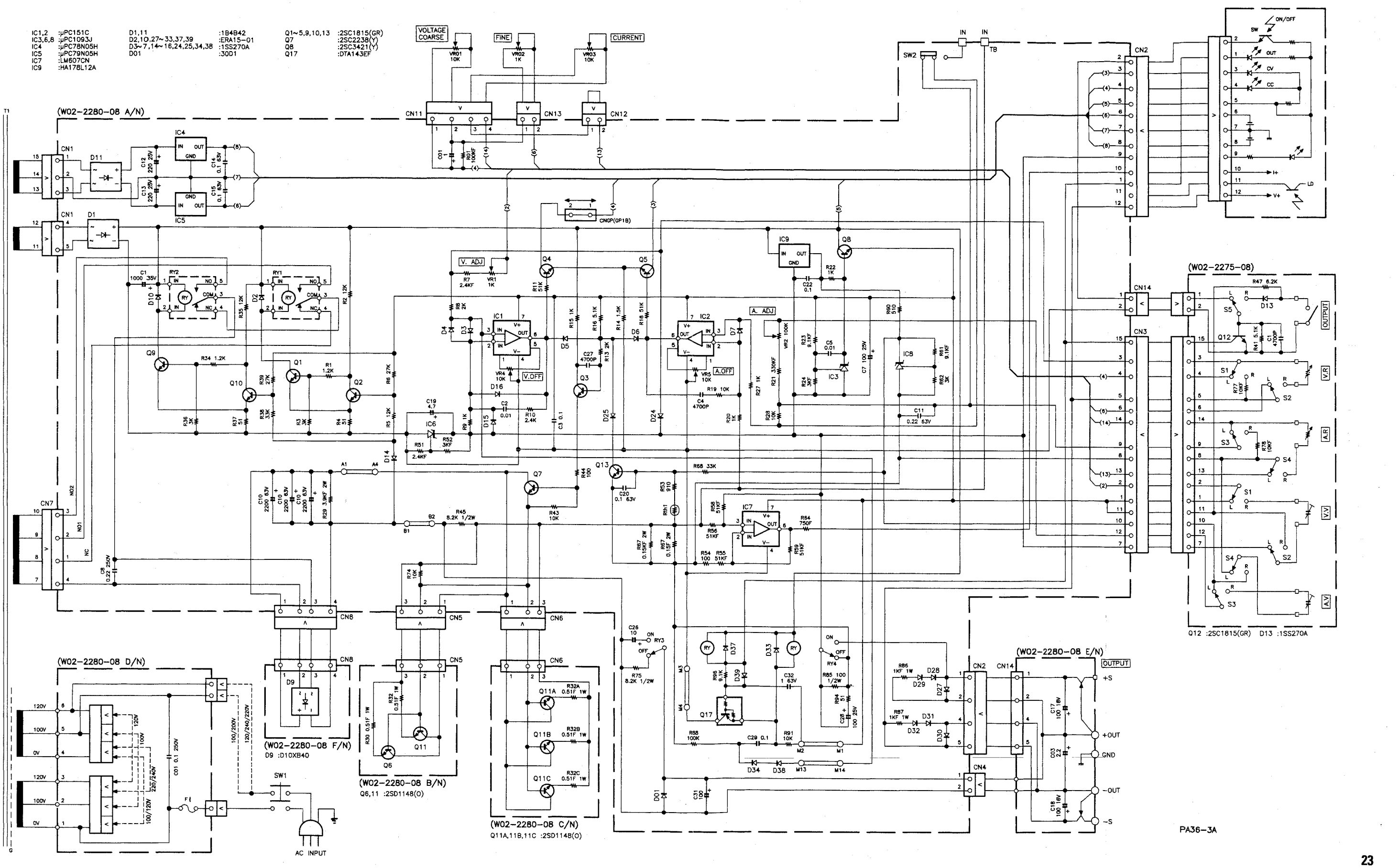
SCHEMATIC DIAGRAM PA18-6A



SCHEMATIC DIAGRAM PA36-1.2A

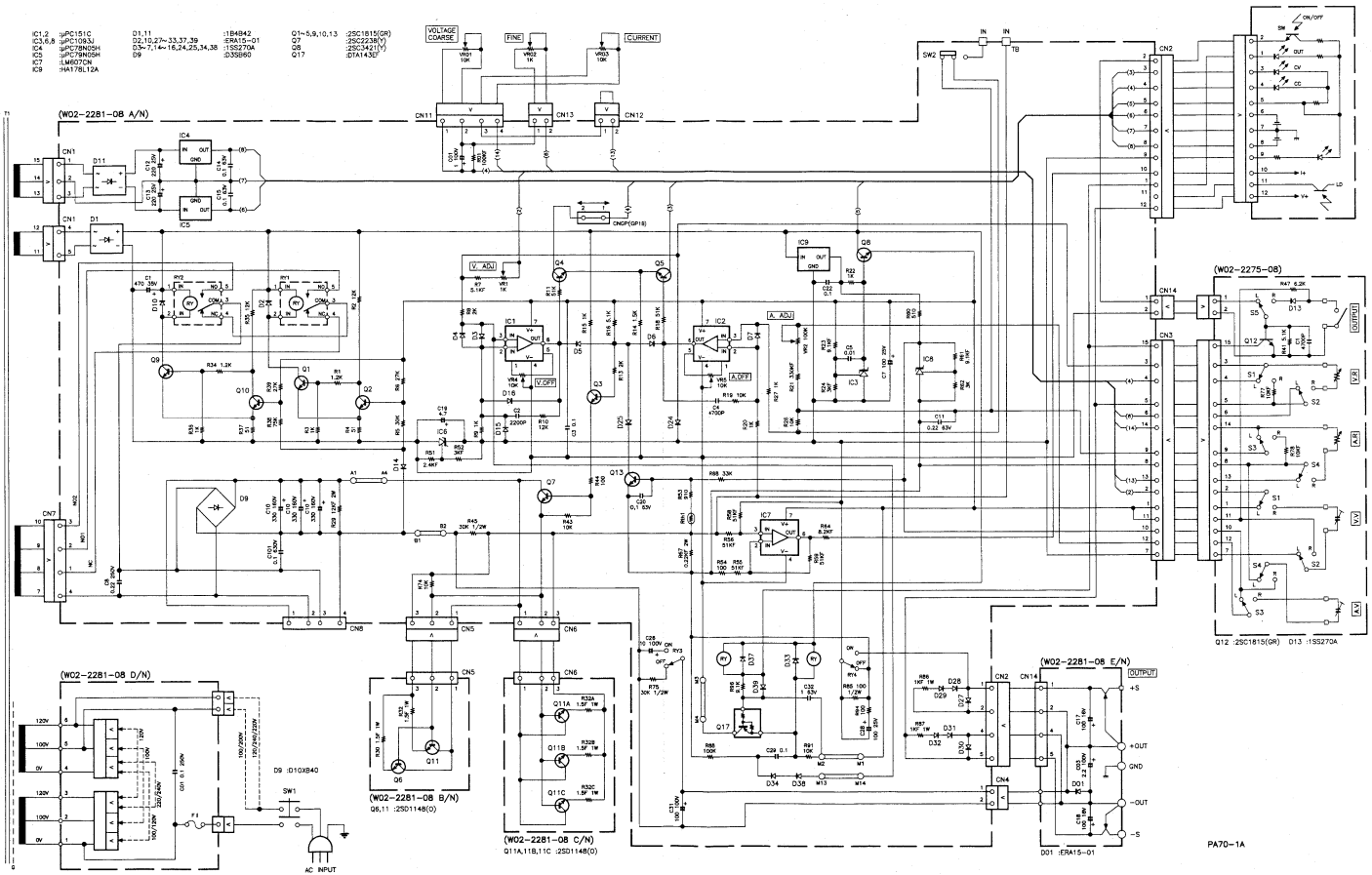


SCHEMATIC DIAGRAM PA36-3A



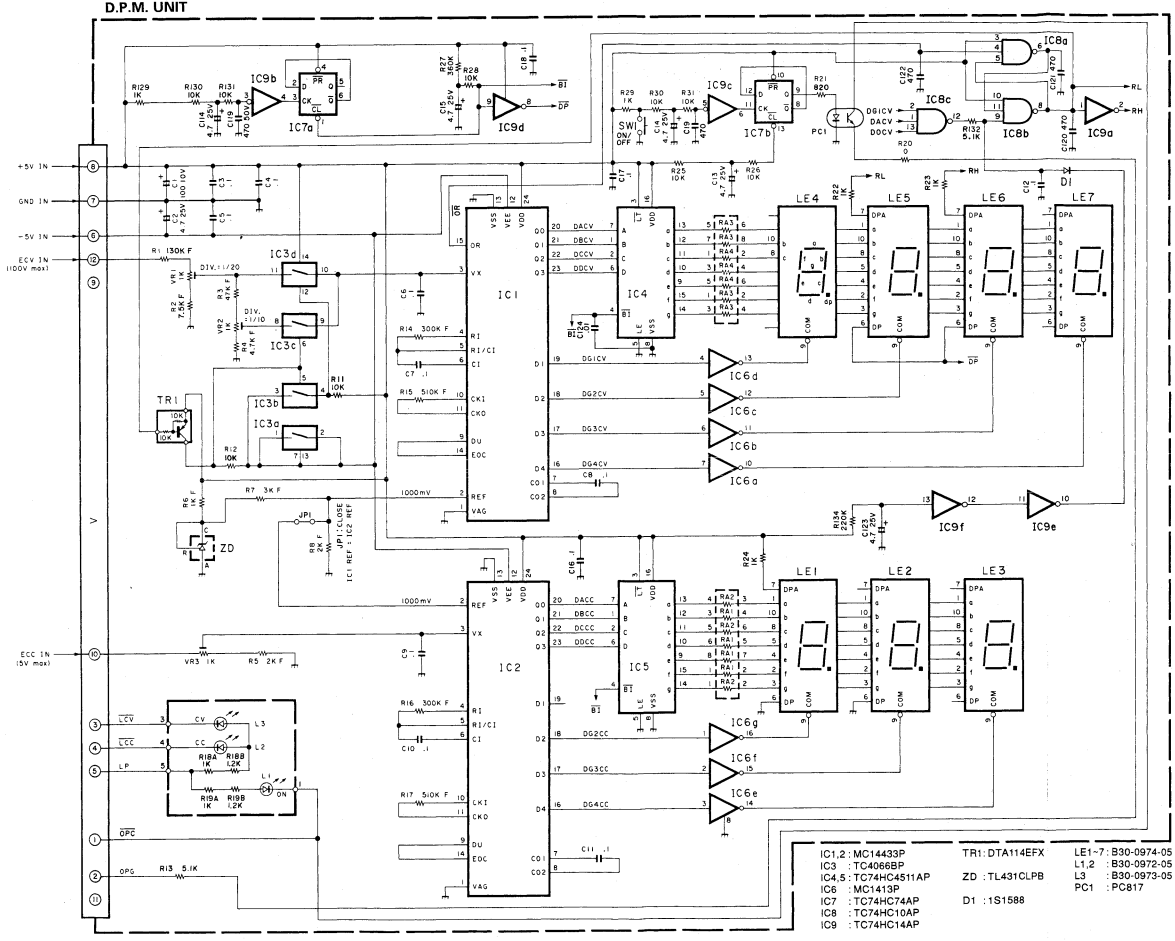
IC1,2 :μPC151C
IC3,6,8 :μPC1093J
IC4 :μPC78N05H
IC5 :μPC79N05H
IC7 :LM607CN
IC9 :HA178L12A
D1,11 :1B4B42
D2,10,27~33,37,39 :ERA15-01
D3~7,14~16,24,25,34,38 :1SS270A
D01 :30D1
Q1~5,9,10,13 :2SC1815(GR)
Q7 :2SC2238(Y)
Q8 :2SC3421(Y)
Q17 :DTA143EF
VOLTAGE COARSE
FINE
CURRENT
VR01 10K
VR02 1K
VR03 10K
CN11
CN13
CN12
SW2
IN
TB
CN2
(W02-2280-08 A/N)
CN1
D11
IC4
IC5
C12 220 25V
C13 220 25V
C14 0.1 63V
C15 0.1 63V
C01 1
R01 100KF
CNGP(GP1B)
D1
C1 1000 35V
RY2
RY1
V. ADJ
R7 2.4KF
VR1 1K
A. ADJ
IC9
Q8
R22 1K
C22 0.1
Q4
Q5
IC1
IC2
V.OFF
A.OFF
VR4 10K
VR5 10K
IC3
IC6
IC8
Q9
Q10
Q1
Q2
Q3
R34 1.2K
R1 1.2K
C27 4700P
C4 4700P
R19 10K
C7 100 25V
C11 0.22 63V
Q7
Q13
R68 33K
R43 10K
R45 8.2K 1/2W
C10 2200 63V
R29 3.9KF 2W
A1
A4
B1
B2
CN7
NO2
NO1
NC
C8 0.22 250V
IC7
R64 750F
R56 51KF
R58 51KF
R54 100
R55 51KF
R59 51KF
R67 0.15KF 2W
R67 0.15F 2W
R53 910
Rth1
C20 0.1 63V
CN8
CN5
CN6
C26 10
RY3
ON
OFF
R75 8.2K 1/2W
RY4
R85 100 1/2W
R94 51
C28 100 25V
C32 1 63V
R96 9.1K
Q17
R88 100K
C29 0.1
R91 10K
M1
M2
M3
M4
M13
M14
D34
D38
D01
C31 100
R86 1KF 1W
R87 1KF 1W
(W02-2280-08 D/N)
120V
100V
0V
100/200V
120/240/220V
220/240V
100/120V
C01 0.1 250V
F
SW1
AC INPUT
(W02-2280-08 F/N)
D9 :D10XB40
(W02-2280-08 B/N)
Q6,11 :2SD1148(O)
R30 0.51F 1W
R32 0.51F 1W
Q6
Q11
(W02-2280-08 C/N)
Q11A,11B,11C :2SD1148(O)
R32A 0.51F 1W
R32B 0.51F 1W
R32C 0.51F 1W
Q11A
Q11B
Q11C
(W02-2280-08 E/N)
OUTPUT
CN14
CN4
+S
+OUT
GND
-OUT
-S
C17 100 16V
C03 2.2
C18 100 16V
ON/OFF
SW
OUT
CV
CC
I+
V+
LD
(W02-2275-08)
R47 6.2K
D13
S5
Q12
R41 5.1K
C1 4700P
S1
S2
S3
S4
R77 10KF
R78 10KF
V.R
A.R
V.V
A.V
CN3
Q12 :2SC1815(GR) D13 :1SS270A
PA36-3A

SCHEMATIC DIAGRAM PA70-1A



SCHEMATIC DIAGRAM PA18-1.2A/3A/PA36-1.2A/3A/PA70-1A

D.P.M. UNIT



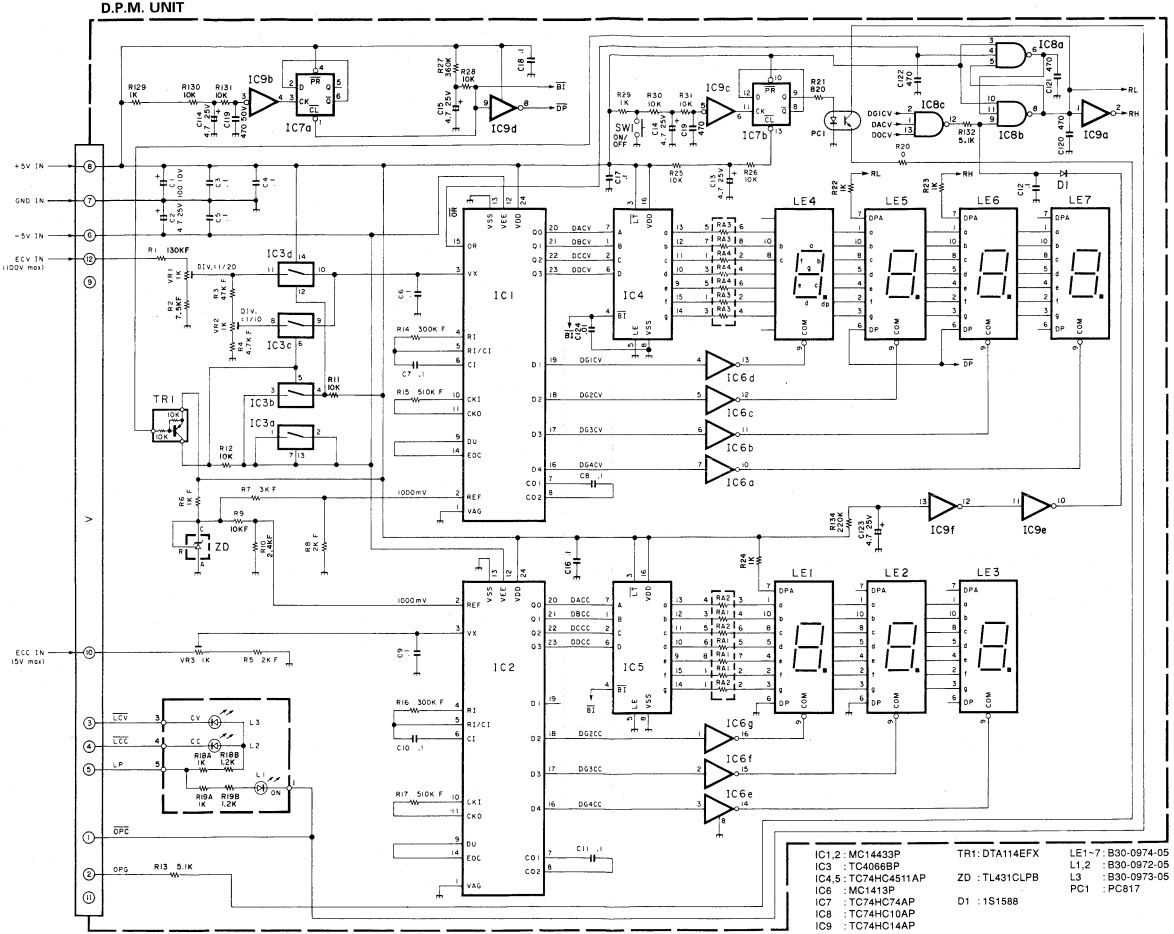
IC1,2 : MC14433P
IC3 : TC4066BP
IC4,5 : TC74HC4511AP
IC6 : MC1413P
IC7 : TC74HC74AP
IC8 : TC74HC10AP
IC9 : TC74HC14AP

TR1: DTA114EFX
ZD : TL431CLPB
D1 : 1S1588

LE1~7 : B30-0974-05
L1,2 : B30-0972-05
L3 : B30-0973-05
PC1 : PC817

SCHEMATIC DIAGRAM PA18-6A

D.P.M. UNIT

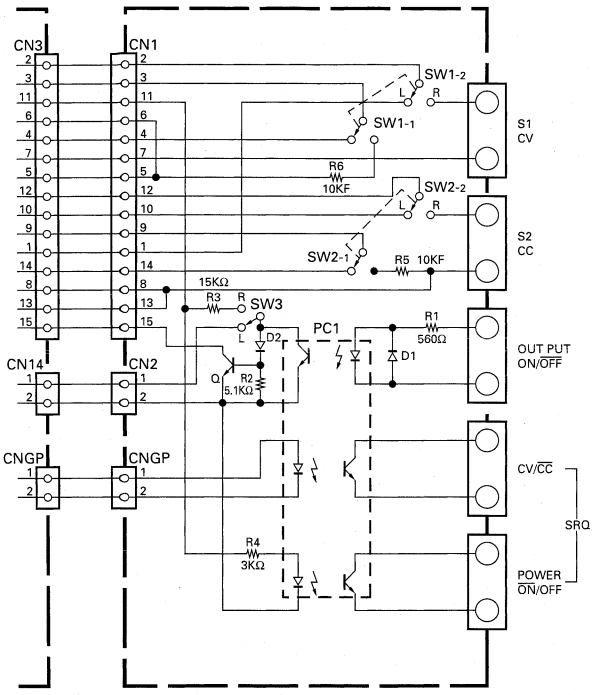


IC1,2 : MC14433P
IC3 : TC4066BP
IC4,5 : TC74HC4511AP
IC6 : MC1413P
IC7 : TC74HC74AP
IC8 : TC74HC10AP
IC9 : TC74HC14AP

TR1: DTA114EFX
ZD : TL431CLPB
D1 : 1S1588

LE1~7 : B30-0974-05
L1,2 : B30-0972-05
L3 : B30-0973-05
PC1 : PC817

SCHEMATIC DIAGRAM (OPTION OP-13A)



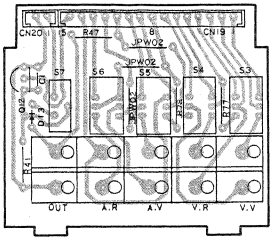
PC1 : TLP521-3 Q : 2SC1815 (GR) D1, 2 : 1S1588

OP-13A

P.C. BOARD

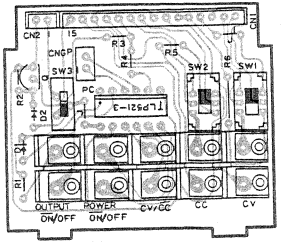
EXT. CONTROL UNIT

Pattern side view



OP-13A UNIT (Y87-2880-00)

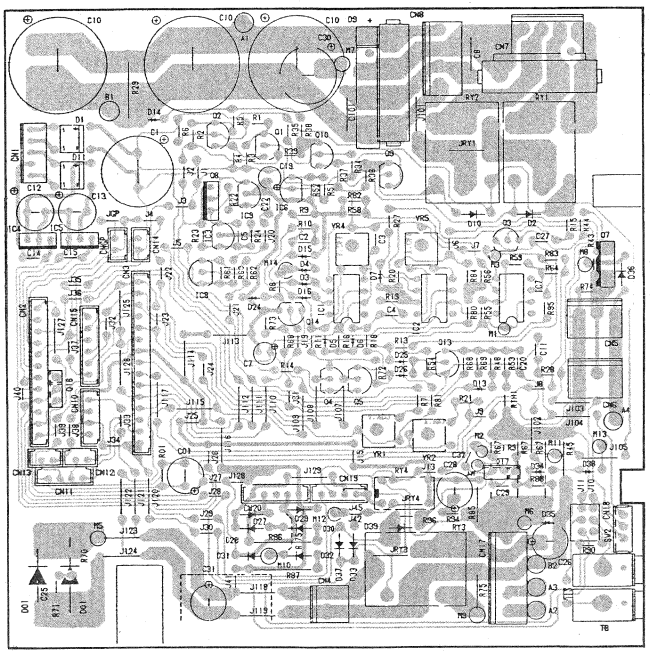
Pattern side view



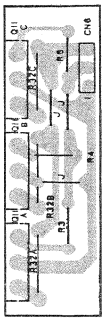
P.C. BOARD

AMP UNIT

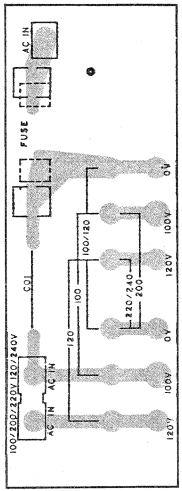
Pattern side view



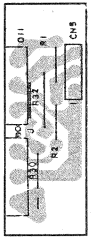
Pattern side view

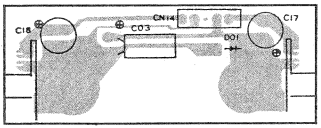


Pattern side view



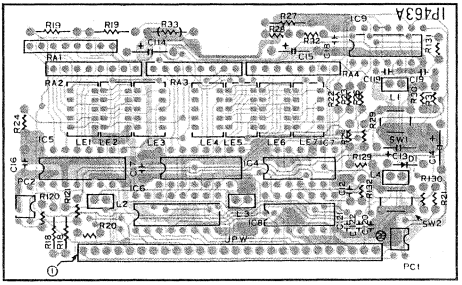
Pattern side view

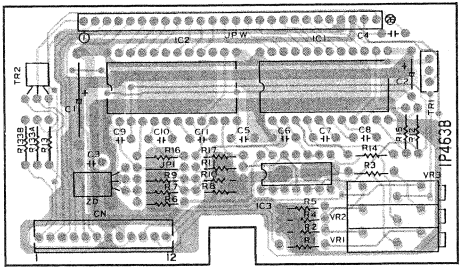




P.C. BOARD

D.P.M. UNIT





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